

# MARINE RECORD

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## LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interests of Lake Carriers, and improve the character of the service rendered to the public.

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### AN AMERICAN DREDGE IN RUSSIA.

The successful trials of the powerful dredge, "Beta," built for the Russian Government by the Societe Cockerill, of Seraing, Belgium, from plans drawn by Lindon W. Bates, of Chicago, have attracted the attention of the leading countries of the world. The contract for this boat, made in 1897, demanded a capacity of 1,600 cubic yards an hour, with a premium of half the dredge's cost if it should deliver 2,400 cubic yards an hour, which was beyond anything heretofore attempted. The "Beta's" official trials have recorded a capacity of 7,800 cubic yards per hour.

The first of these hydraulic dredge boats was built for the United States Government in 1896 for use on the bars in the Mississippi river. It attracted the attention of the Belgian Government, which sent a committee of engineers to America to investigate the Bates system with reference to the availability of the machines for the proposed "Grand Compure" in the Scheldt below Antwerp. The commission reported minutely on the American dredges and advised their adoption for the Scheldt improvement. This report attracted the attention of the Russian authorities, who had been trying to find means to remove obstructions in the Volga for a long series of years. Mr. Bates' report to Prince Hilkoﬀ resulted in a contract to construct for the Russian Government, for the sum of \$515,000, the largest and most powerful dredging machine in the world, to be self-propelling by electric power, something unheard of in hydraulic dredging.

So general was the interest in the official trial that, in addition to Prince Hilkoﬀ and four Russian commissioners, there were present the German, French, Austrian and Turkish ambassadors, the Belgian ministers, commissions from Australia, India, Germany, France and the Argentine, and hundreds of engineers from all parts of Europe. Trains were run at reduced rates to accommodate the people eager to see the "American dredge," and the Societe Cockerill for six weeks kept boats at Antwerp taking visitors up and down the Scheldt to the points of operation.

The official trials demanded two things: First, that the dredge should, on a 2-foot cut, 1,000 feet in length, make an output of 1,500 cubic meters (52,974 cubic feet) per hour; second, that in a three-hours' continuous run in a cut 3½ feet deep, it should put out 3,000 cubic meters (105,948 cubic feet) per hour. The three-hour test was to prove the capacity for enduring work. The measurements were made at Antwerp in excavation. The official record states that the tests show an average capacity, "conservatively estimated," of 7,000 cubic yards an hour. This by barge measurement gives about 8,400 cubic yards per hour as the average. The maximum was at the rate of 10,350, both being

one-third in excess of the highest official records attained on the Mississippi.

Prof. V. E. Timonoff, Councilor of State and one of the commissioners sent down to accept the dredge, summarizes as follows:

"According to contract, the dredge should excavate 3,000 cubic meters at a thickness of 3½ feet, and 1,500 cubic meters at a thickness of 2 feet. Comparing these figures with the official report, we see that for a stratum of 3½ feet the capacity proved to be 1.46 times more than contracted; for a stratum of 2 feet, 3.77 times more than contracted for."

The government of Queensland, Australia, having difficulty with its harbors and a capital city which floods keep inundating, invited Mr. Bates to visit that city last winter. He has reported on all the ports of the colony. His system was adopted, and machinery to the value of \$1,250,000 was decided upon, provided the Russian trials should prove the machines capable of fulfilling the contracts.

As the result of the trials of the "Beta," Calcutta has closed an order for one dredge of the same type. Queensland has contracted for three of 10,000 horse-power. Of these, one destined to combat the effects of floods is to be more powerful than the Volga machine. Russia has in contemplation several more, and other negotiations are pending which will carry this valuable invention to many countries of the globe.

St. Petersburg.

W. R. HOLLOWAY,

Consul-General.

### THE WORLD'S TONNAGE.

| Flag or Nationality. | Steam Vessels Owned, according to Lloyd's Register Book, 1899-1900. |           |            | Sailing Vessels Owned, according to Lloyd's Register Book, 1899-1900. |           |
|----------------------|---|-----------|------------|---|-----------|
|                      | No.   | TONS.     |            | No.   | Tons.     |
|                      |   | Net.      | Gross.     |   |           |
| BRITISH.             |   |           |            |   |           |
| Un'd Kingd'm         | 6,920   | 6,819,148 | 11,086,241 | 2,053   | 1,840,683 |
| Colonies.....        | 917   | 380,626   | 633,006    | 1,108   | 428,578   |
| America,             |   |           |            |   |           |
| Un'd States of *     | 605   | 512,572   | 759,750    | 2,134   | 1,112,495 |
| Austro-Hun'n         | 203   | 213,215   | 344,685    | 74  | 35,729    |
| Danish .....         | 360   | 236,705   | 403,339    | 436   | 108,619   |
| Dutch .....          | 263   | 265,063   | 389,253    | 118   | 66,356    |
| French .....         | 639   | 516,016   | 997,235    | 543   | 244,856   |
| German .....         | 1,133   | 1,216,521 | 1,946,732  | 543   | 506,602   |
| Italian .....        | 282   | 280,611   | 445,565    | 868   | 430,286   |
| Norwegian .....      | 779   | 451,449   | 737,412    | 1,749   | 956,818   |
| Russian .....        | 456   | 245,751   | 392,985    | 762   | 250,542   |
| Spanish .....        | 438   | 345,661   | 537,840    | 263   | 71,045    |
| Swedish .....        | 642   | 238,292   | 380,572    | 766   | 225,419   |

\*Excluding vessels trading on the Great Lakes.

### ASTRONOMICAL NOTES FOR MARCH.

Astronomical data for March, 1900, furnished THE MARINE RECORD by the Washburn observatory:

Mercury is an evening star and reaches greatest elongation east March 8, near which date it may be seen, on very clear evenings, soon after sunset, nearly above the west point of the horizon. Venus is the brilliant evening star, seen in the northwestern and western sky. Its brightness is increasing at an accelerated rate. The orbital motion of the planet brings it nearer the earth. Mars has become morning star but does not make much of an appearance yet, as it rises only a half-hour before the sun by March 31. Jupiter and Saturn are the bright morning planets, the former the most brilliant star in the morning sky. Jupiter reaches the meridian from 4 to 6 a. m. at considerable distance south, while Saturn follows in the southeastern sky and reaches the meridian about one hour and a half later and at nearly the same altitude.

The times of sunrise and sunset for the month at Milwaukee, are as follows:

|              | SUNRISE | SUNSET. |
|--------------|---------|---------|
| Mar. 1 ..... | 6:28    | 5:38    |
| " 11 .....   | 6:11    | 5:53    |
| " 21 .....   | 5:54    | 6:05    |
| " 31 .....   | 5:36    | 6:16    |

The times of the moon's phases are:

|                     |                    |
|---------------------|--------------------|
| New moon .....      | Mar. 1, 5:25 a. m. |
| First Quarter ..... | " 7, 11:34 p. m.   |
| Full moon .....     | " 16, 2:12 a. m.   |
| Third Quarter ..... | " 23, 11:36 p. m.  |
| New moon .....      | " 30, 2:30 p. m.   |

The principal fixed stars visible during the month in the evening sky are: To the west, Capella, Aldebaran, the Pleiades, Sirius, and the bright stars of the constellation Orion. Near the meridian, Castor and Pollux and Procyon. To the east, Regulus.

### LICENSING MASTERS AND PILOTS.

Evidently the Canadian system of licensing masters and pilots, or mates as they term the latter officer, is in just as unsatisfactory a condition on that side of the border as it is here.

In so far as the licensing of lake pilots is concerned, there is a lack of uniformity in the examinations which the applicant undergoes before getting a license; there is also a good deal of personal arbitrariness evidenced regarding the grade of license to which a candidate is entitled, but, if the situation in Canada is as the Collingwood Bulletin sets forth, the system over there is even worse than it is on this side of the lakes.

The Bulletin says: "The laws respecting master and mates should, we think, be amended. Under the present regulations, or at least in the manner in which they are enforced, there is no uniformity in conducting the examinations. There is a traveling examiner who is paid by fees, and as a consequence, the candidate is not required to seek the examiner, for this official, it is said, is always seeking candidates. In this way almost any handy man around the forward end of a steamboat may secure papers without much trouble or expense. This state of affairs should be remedied and at once. Instead of having an officer traveling around urging all kinds of men to appear before him, a board of examiners should be appointed to hold written examinations at stated places and at stated times. By this method only efficient men would be permitted to hold licenses on steamboats carrying precious lives and valuable cargoes. These examiners should be paid adequate salaries and the incentive to rush candidates through be entirely removed."

Canadian officers should at least be the equals in technical efficiency of those piloting vessels owned in the United States. It is worthy of note to mark the language of the foregoing. The Canadian examiner urges the candidate to appear before him, while the United States examiner will, in some cases, grant an interview, but won't appoint even a time for examination, or may condescend to say that several days, or perhaps weeks, ahead, leisure may be found to see what amount of technical knowledge the candidate may have acquired, and to rate him accordingly.

The civil service rules insure local inspectors their positions, and as a consequence, some of them are becoming arrogant, also dictatorial in their bearing towards candidates seeking a voluntary examination so as to secure a license to act, to work, to ship in a capacity which they are capable of fulfilling, etc. Formerly the wishes of influential persons, vessel owners, managers and others, coupled with the exigencies of political changes, made the position of local steamboat inspectors a rather insecure office to hang on to; all this is now changed and the other phase of the situation shines eminent. Even so, the day has not yet arrived when a United States local inspector of steamboats has to demean himself and minimize the importance of his office by urging "almost any handy man around the forward end of a steamboat to secure papers," hence, the American lake service is better administered than the Canadian.





## CHICAGO.

*Special Correspondence to The Marine Record.*

Grain freights are nominal at 2 3/4 cents on corn to Buffalo, but no charters have been made recently.

Capt. J. S. Dunham has sold the schooner City of Sheboygan to Capts. Oleson and Tollifson and Win Schlossen, of Milwaukee.

Mr. Joseph Berolzheimer has been appointed general passenger agent of the Manitou Steamship Co., with offices at Rush and North Water Streets.

Charles Maytham, of the Maytham Tug line, of Buffalo, and the Barry Bros., of Chicago, are figuring on starting a tug line here. The Barry's have two tugs and are looking for more.

On the 9th inst. the city council of Chicago passed an ordinance authorizing the controller to issue bonds to the extent of \$2,500,000 to develop water power on the Chicago drainage canal. The scheme for the water power plant in contemplation and for the transmission of energy therefrom is to serve for lighting and pumping purposes at Chicago.

Capt. David Curran, recently of the steamer Louis Pahlow has purchased an interest in the steamer Colin Campbell, from Martin & Silliman, of Cheboygan, Mich., Martin & Silliman and Capt. David Curran have purchased the barge C. G. King from the Hines Lumber Co., as a consort for the Campbell, Capt. Curran will be master of the Campbell and manager of the fleet.

The Supreme Court of Illinois has decided that the Sanitary District of Chicago has no right to destroy the dams in the Illinois river at Henry and Copperas creek. The court states that these dams were built at considerable cost, for the purposes of slack-water navigation, and that their removal is not necessary for any purpose of the sanitary district. This decision is in reversal of a recent decision of the court of Fulton county.

The Manitou Steamship Co., having by purchase acquired the ownership of the steamship Manitou, including its docks and good-will of the business, will continue to operate the same in the exclusive passenger traffic between Chicago and Mackinac Island and intermediate points. At a meeting of its Board of Directors the following officers were elected. N. F. Leopold, president, W. I. Babcock, vice president, H. W. Thorp, secretary and treasurer. Executive Board N. F. Leopold, A. W. Goodrich, W. L. Brown.

Mr. Geo. L. McCurdy, one of the recent inspectors of the Chicago drainage canal, in the interests of insurance men and underwriters, says: "Something radical must be done at once if Chicago's water commerce is to be preserved. With a current I do not see how traffic of big boats can be carried on at all. The boats will be driven away from Chicago. It is not a discrimination against marine men, for they have plenty to do elsewhere, but it will injure shipping interests. 'It is not possible for an insurance company to discriminate against a port, but the vessel owners themselves will solve the difficulty by keeping their boats away.'"

The steamer Armenia loaded with grain to a draft of 16 ft. 10 inches, being towed down Chicago river Saturday morning at 10 o'clock, stranded on the Washington street tunnel and remained on until Sunday morning at 7:30 o'clock, when she floated off with the current. Two tugs were sent to her at 8:30 and tried to drag her over the tunnel but without success, another attempt was made by 4 tugs Monday morning, with no better result, and the steamer was towed back to between Madison and Washington street bridges. It is claimed that the water was 5 inches above data, which is 17 feet on the tunnel, Sunday morning, when the steamer floated off it.

The Manitou Steamship Co. have appointed the following officers to the steamship Manitou. Capt. Allan McIntyre master, J. G. Parsons 1st officer, R. L. Peck chief engineer, Frank J. Carlin purser, Jas. A. Shaw chief steward. The Manitou will start on her first trip June 21st, and her last trip September 14th, from the same dock as formerly, north of Rush Street bridge. The company are making considerable alterations and improvements on the Manitou, putting in about 25 additional state rooms and parlors, some of which will be fitted with private bath-rooms, giving accommodation to about 75 more passengers, in so doing they abolish the freight business entirely, and she will be fitted out as complete as any first-class hotel.

The Barry Bros. Trans. Co.'s steamer F. and P. M. No. 1 collided with the Goodrich Trans. Co.'s steamer Indiana, last Thursday morning about two miles north-east of the two-mile water works crib. At the time of the accident the Indiana was stuck fast in the ice and the F. and P. M. was following in her wake. Capt. Pitman, of the F. and P. M. No. 1, in trying to cut through the ice to the westward of the Indiana, struck some very heavy ice, causing the steamer to

sheer back into the channel behind the Indiana, and before she could be stopped she ran into the stern of the Indiana and rushed in her fantail, stringer and bulwarks, doing considerable damage. The steamers assisted each other in breaking up the ice until they arrived at Milwaukee in the afternoon.

The H. W. Williams Transportation Co., of South Haven, was reorganized this spring as follows: H. W. Williams, president; J. G. Wiley, superintendent; C. W. Williams, secretary and treasurer; W. K. Greenbaum, general passenger and freight agent, with offices in Chicago. The company will commence tri-weekly sailings from Chicago to South Haven, on April 2d, and will inaugurate tri-daily sailings during the summer season. The company's steamers will have the freight houses now used by the L. M. & L. S. Transportation Co., and their steamers will use the dock northeast of Rush street bridge. The Williams line started about 12 years ago with one steamer catering for the passenger trade. They are now operating four passenger steamers—the H. W. Williams, City of Kalamazoo, Glen and the fine side-wheel steamer Darius Cole, which they purchased last fall at Detroit and brought to South Haven.

Capt. John Stewart, of the Graham & Morton Trans. Co.'s steamer City of Milwaukee, arrived here from Oakland, Cal., last Thursday, and went to Benton Harbor on Friday. He will bring the company's steamer City of Louisville to Chicago to commence her season's work as soon as the ice, which at present is very heavy, gets away from here. She was scheduled to arrive here on Tuesday, March 6th. The company intends to put three boats on the east shore route the coming season, the new service to leave Chicago for Grand Haven every morning and come direct back every night, thereby enabling the boat leaving here at night to return from Muskegon direct without touching at Grand Haven as formerly, which will be of considerable benefit to the shippers by getting their green stuff and fruit on the market here in the morning. This business is increasing rapidly and has become a very important factor. The steamer City of Racine is in dock at Milwaukee with a broken shoe and wheel caused by the heavy ice.

The suit of Eng. Joshua Ritchie, of Port Washington, against F. A. Dennett, of Sheboygan, which has been brought in admiralty for \$601.92 claimed to be due for wages under a broken contract, was tried before Judge Seaman, at Milwaukee last week, and decision was taken under advisement. The plaintiff alleges that he was engaged as engineer of Mr. Dennett's steambarge, R. A. Seymour, for the season of 1899 at \$70 per month. The agreement, he claims, was made about March 1st, and when the navigation season was about to open he was notified that his services were not required. The answer is that no agreement was made with Mr. Ritchie for 1899. Mr. Ritchie testified that he had been an engineer on the lakes for nineteen years and that his certificate was for a 500-ton high-pressure. He said he did not belong to the Marine Engineer's Association. Capt. Van Ellis, a tug captain of Port Washington, testified that Ritchie worked for him as engineer on his tug during the season of 1898-9. He testified that he overheard a conversation between the captain of the Seymour and Ritchie, and that he was informed by the former that Ritchie had been engaged as engineer on the Seymour for the coming season, and that he would have to get a new engineer for his tug. He testified that Ritchie always gave satisfaction as his engineer.

## PORT HURON

*Special Correspondence to The Marine Record.*

On Monday Archie Wright sent a gang of men to Toledo to work on the boilers of the steamer Harlem.

Owing to the cold weather work on the steel boats at the yards of the Jenks Ship Building Co. has been suspended.

The government has secured an option on the steamer C. W. Moore, of the Hart line. If purchased the boat will be used in the light-house supply service.

John L. Martin, formerly a well known lake captain, died at Charlotte on Wednesday of this week. His remains were taken to Petrolia for burial. Mr. Martin was well known in Port Huron.

Fred Whitney died this week after a long illness with typhoid fever. Fred has been clerk on the Star Line steamers for upwards of ten years and was remarkably well liked. He was 35 years old.

The tug business gives promise of being very interesting in the vicinity of this port this season. While the tug trust controls most of the business, having the largest number of tugs in the port, there will be considerable competition as there are a number of tug owners who are on their own hook.

The funeral of David Robeson, Jr., who was fatally burned last week, was very largely attended. Deceased was well known, having been born and raised in this city. He was popular with everybody and led an industrious upright life. He was a splendid business man, and many friends mourn with the stricken family and relatives his untimely death.

The Green Bay Vessel Co. will build a first-class tug, about the size of the George D. Nau. Plans have been prepared and work will be started as soon as the large steamer now being constructed in the north side yards is launched, which will be a matter of a few weeks. The proposed new tug will be for sale. The company has had several offers recently for its steamer Normandie. It is doubtful, however, if the negotiations will result in the sale of the boat.

## CLEVELAND.

*Special Correspondence to The Marine Record.*

The cold snap has delayed the sending forward of ore to the furnaces, besides, there is still complaint of a scarcity of railroad cars.

The steamers F. B. Case and J. W. Moore will be operated by Drake, Bartow & Co. this season. They will carry ore from the head of Lake Superior.

The many friends of Mr. Robert Logan, naval architect and consulting engineer, will be sorry to learn that he has been laid up for the past few days with a severe cold. It is hoped that with good care and attention he will be at his office again toward the end of the week.

Capt. James Corrigan has purchased the engines that were removed from the burned hull of the steamer Aurora in the Detroit river some time ago, and also two boilers, which he will install in one of his steel barges. He will probably not be able to have the work done until next fall.

Capt. Charles A. Richardson, U. S. local inspector of hulls, Chicago, spent Thursday in Cleveland, and renewed acquaintance with a number of his former associates and friends. The captain left for Detroit in the evening and expected to reach home so as to spend Sunday there.

Capt. McNeff who is still keeping to windward, hale and hearty, is one of the old-time skippers, having followed the lakes from boyhood. He has sailed steamers managed in the office of Hutchinson & Co., for a number of years. For the past several seasons he has sailed the steamer City of Glasgow.

The friends of Mr. W. B. Stockman, late forecast official of the Weather Bureau at this port, will be pleased to learn that he is convalescent and again at duty in Havana after an attack of yellow fever. It is expected that Mr. Stockman will be given a vacation in the near future and that he will then visit Cleveland.

The announcement is made by the Detroit & Cleveland Steam Navigation Co., that, ice permitting, the first boat will come down from Detroit March 20. A continuation of this cold snap might necessitate a change in the plans, but it is hardly believed that this weather will last a sufficient length of time to alter the plans.

M. A. Hanna & Co., Cleveland, have added to their office room and re-arranged their quarters recently, now having the entire sixth floor of the Perry-Payne Building. The Carnegie Steel Co. and connected ore, vessel and dock interests are extending their offices also, taking in most of the seventh floor of the same building.

The Cleveland & Buffalo Transit Co. officials will make no definite statement of the time when they will open their service for the season. General Passenger Agent Herman says if the ice will permit they will be running by the first of April. He gives this assurance, however, that they will be running into Buffalo as soon as any ordinary boat can safely get through the ice.

Committees of the East End Improvement Association have lately interviewed Col. Jared A. Smith in furtherance of their plan to ask for an extension of the breakwater to Wilson avenue and erection of a dock for passenger vessels at that point. Various concerns doing business along the lake shore have extended their territory by filling in the land to considerable distances beyond the original shore line, and the breakwater, if extended would be turned sharply toward the north in order to provide harbor room at sufficient depth for large vessels. The undertaking involves a great expense and the original plans of the improvement association may be modified to include a dock and independent breakwater only.

Two of the largest shafts ever manufactured are now being manufactured by the Cleveland City Forge & Iron Co., at their works at the foot of Case avenue. The shafts are for the Glasgow (Scotland) Street Railway Co. Some idea of the immensity of the shafts can be ascertained from the fact that the great shaft that was in the Ferris Wheel at Chicago during the World's Fair, was only a trifle larger than the shafts now being manufactured in Cleveland. The ingots from which each shaft is made weighed fully fifty tons. In a finished state one of the shafts will weigh about thirty-five tons. Each shaft is 25 feet long and from 26 to 37 in. in diameter. A four-inch bore is being drilled through this immense piece of steel. After the four-inch bore, a six, and eight and lastly a ten-inch drill will be used. The officials for the Glasgow Railway Co., have placed the contracts in this country for the manufacture of all the machinery to be used in operating the road.

A triantic sort of underground warfare has done a little belching lately. All hands around here knows that Capt. Sam Gould occupies his winter months in giving instructions to those wishing to secure a license. He has done and is doing good faithful work and charges but a very moderate fee. Now comes sailing in the officers of the branch Hydrographic Office and by furnishing gratuitous information takes away Capt. Gould's students, or at least lessens the number in his class; finally, the steamboat inspectors don't want to bother too much with these book-learned candidates, nohow. Capt. Gould wrote the Hydrographic Office, Washington, asking a show for his white alley and requesting that the instructor at the branch office be called off. The branch office understands that it is strictly within its province to disseminate information, and it can't be gainsaid but that the local inspectors of steamboats want to find out how much dissemination has been done on candidates coming before them seeking for a



license. Other things being equal and, siding with the weaker party, Capt. Gould is trying to make a living, the other fellows salaries are paid, anyhow.

Ore shippers seem to be practically through with season chartering, and aside from a few small blocks at the head of the lakes, there is no ore on the market. There is some enquiry for first trip cargoes, but the shippers are not ready to make single trip charters. Grain shippers at Milwaukee have placed a number of boats at  $2\frac{3}{4}$  cents on corn and  $1\frac{1}{2}$  cents on oats to Buffalo. Elsewhere the grain market is quiet. Little or no chartering for coal is being done. The freight market is in about the same condition it has been for the past few weeks. There is a small block of coal for the head of the lakes on the market at 50 cents and there does not seem to be any great rush for it. Vesselmen and shippers are unable to agree on a season rate to Milwaukee. The coal men are talking 60 cents, the same figure that has been paid to Manitowoc and Sheboygan. The lowest rate named by the owners is 70 cents, and some of the vesselmen will not tie up for less than 75 cents. The lumber rate from ports at the head of Lake Superior has not been fixed and vesselmen and shippers are as far apart as ever. The lumber men are in the market for vessel property, and a few small boats of that class changed hands during the week.

Among the first and most important vessel owning firms to establish itself on a large basis at this port was the firm which was formed under the name of the Wilson Line, but since 1890 has been doing business as the Wilson Transit Co., of which Capt. Thomas Wilson is the president and general manager. Capt. Wilson has been the chief executive of the company since it was first started in the winter of 1872. In that year he built the steamer D. M. Wilson, and a few years later the Hiawatha and Minnehaha. After that Capt. Wilson took partners in his vessel business and increased his fleet by the Tacoma and the Wallula, and two years later the Missoula, Sitka, Spencer and Wadena. The next vessels built by the company were the Yakima, Spokane, Olympia and Yukon. At the present time the company's fleet, not including two steamers now on the stocks, is as follows: Steamer Henry W. Oliver, 7,000 tons; steamer Andrew Carnegie, 6,000 tons; steamer W. D. Rees, 5,500 tons; schooner David Z. Norton, 5,500 tons; steamer Yuma, 4,000 tons; steamer Spokane, 3,300 tons; schooner Yukon, 3,000 tons; steamer Olympia, 2,900 tons; steamer Yakima, 2,900 tons; steamer Sitka, 2,600 tons; steamer Wallula, 2,600 tons; steamer C. Tower, Jr., 2,500 tons; steamer Volunteer, 2,700 tons. The Oliver is one of the largest boats on the Great Lakes, having a length over all of 460 feet. The officers of the Wilson Transit Co., are as follows: President and general manager, Capt. Thomas Wilson; vice president, Robert McLauchlan; secretary and counsel, Harvey D. Goulder; assistant secretary, A. W. Thomas. The directorate is made up as follows: W. D. Rees, G. L. Quayle, Thomas Wilson, Robert McLauchlan and J. E. Upson.

#### DULUTH-SUPERIOR.

*Special Correspondence to The Marine Record.*

The earliest opening of navigation in the "Soo" river was in 1858, on April 13, last year it was April 29. The latest opening is recorded on June 18, 1855. The mean for the last forty years shows about May 1, though of late years an April opening has prevailed.

J. H. Hahn, of the Hahn Lumber Co., Cleveland, has bought enough lumber to make a good sized cargo. This lumber was bought from the Bigelow Co. out of next seasons' cut. Mr. Hahn also looked over other stocks and at Duluth Saturday he bought a million feet.

Dan Brown, at one time connected with the Superior Ship Building Co., and more recently located at Newport News, has returned to Superior to become chief draughtsman of the shipbuilding company succeeding Hugh Calderwood, who has taken charge of Capt. McDougall's new yard at Collingwood, Canada.

Cleveland, Pittsburg, Chicago and Buffalo lumber dealers have closed up the purchase of an enormous quantity of stuff within the past week or so, even broken lots are snapped up and lumber is lumber these times, of course it always was, but purchasers will think they are buying a valuable product before the season is over. Mr. A. McCall, of Simcoe, Ont., has operated very extensively this season in logs and contracting with saw mills.

The new ore dock at Duluth is going up fast, and when completed will add about one-fourth more to the capacity of the present docks. That capacity now is equal to handling thirteen ore cargoes every twenty-four hours when mines, trains and vessels are all making good connections. The average ore cargo from the West Duluth docks is between 3,000 and 5,000 tons, so that the present docks can handle about 50,000 tons of ore in twenty-four hours, and with the new dock this amount can be increased by about 25 per cent.

The first engine to be constructed in the new shops of the Superior Ship Building Co., Superior, of which D. E. Ford is manager, will be for the steamer of St. Lawrence canal dimensions that the Union Dry Dock Co., of Buffalo, is to build for J. F. Crosthwaite and others. The steamer is to be 258 feet over all, 40 feet beam, and  $18\frac{1}{4}$  feet depth, and the engines will be triple-expansion of 20, 33 and 54 inches cylinder diameters, and a common stroke of 40 inches. There will be a surface condenser, and air pumps will be attached with independent circulating pumps. The boilers, to be built at the Cleveland works of the American Ship Building Co., will be  $12\frac{1}{2} \times 12\frac{1}{2}$  feet, allowed 170 pounds of steam.

While buyers of lumber in the east who get their stock from the manufacturing points at the head of the lakes are of the opinion that the price asked by the manufacturers is higher than they ought to pay, the manufacturers have a strong argument in the increased cost of raw material and the expense of getting it to their mills. As an illustration of this a large operator in Douglas county, Wis., paid \$6 per thousand for his timber last fall. He has made a contract under which his logs will cost him \$12.87 delivered at the mill. Add to this the saw bill, which will not be less than \$2.50 per thousand, and it is not hard to figure that high prices are necessary if he is to make any profit on his stock.

The capacity for handling and storing coal in Superior will be increased very considerably this spring. In fact, several of the docks are already making preparations for extensive improvements. The Philadelphia & Reading Co., which occupies the Eastern Minnesota's dock under a lease, is figuring on erecting three new unloading towers, which will enable the company to utilize the full dock and make the capacity very much larger than at present. The Lehigh Coal & Coke Co. has been figuring on making repairs to the dock which it now leases. It is understood that it has been practically decided to make these if the company re-leases the dock next May. The portion which was burned a year ago made quite a difference in the capacity for coal handling and storing.

#### DETROIT.

*Special Correspondence to The Marine Record.*

Mr. L. C. Waldo, of the Roby Transportation Co., says the chances for early navigation in the upper lakes went glimmering with the last cold spell. It will be time enough a month hence to talk of starting out. Mr. Waldo is chairman of the Lake Carriers' committee on grain shoveling, and he says there is no doubt but that a mutually satisfactory arrangement will be brought about at Buffalo, prior to the opening of navigation.

The railroad car ferries have lost a lot of time this week. The Free Press, in an editorial, says: "The experience of the past few days only emphasizes a necessity that has long been recognized and admitted. The river should be bridged at this point. The best interests of commerce and travel imperatively demand it. The maintenance of an antiquated system, notwithstanding its superb equipment, is detrimental and inexcusable from every material point of view."

Capt. R. C. Brittain, of Saugatuck, has sold the steamer May Martet to Topel & McHugh, of Green Bay, Wis. As an indication of the prosperity of lumber carriers on Lake Michigan, it may be stated that the steam barge Marshal F. Butters, which was offered for sale for \$9,000 at the close of the season of 1898, has just been chartered for the coming season for \$12,000 and all expenses paid. Another lumber barge which was offered for sale in November, 1898, for \$12,000 was sold on Feb. 15 for \$47,000.

Edmund Hall, of Detroit, has bought the Minor Lumber Co.'s mill and will locate it on the north shore of Georgian Bay, near the Cutler mill, on a site that was bought from the Cutlers. Northrop & McEwen, of Bay City, have bought the Moiles Bros.' mill on John's island in the Georgian Bay district, and will start it up in the spring. W. & A. McArthur & Co., of Cheboygan, have bought a big mill plant on the Little Current, in the Georgian Bay district, and J. & T. Charlton, of Tonawanda have bought another big plant at Collingwood, in the same region.

Alger county is one of the best lumbering sections left in the peninsula, and this winter is producing the biggest log crop ever in its history. There are seventeen camps in the county operated by six concerns, which will together get out 38,500,000 feet of pine logs. The cut is divided among the concerns as follows: Manistique Lumber Co., 24,500,000; Eddy Land Co., 7,000,000; D. N. McLeod 4,000,000; Grondin & Balcome 1,000,000; Frank Young 1,000,000; Charles Stone 1,000,000. The entire cut will be worked up into timber next summer in the Marias Lumber Co.'s mill, located at Grand Marias.

The local board of steamboat inspectors received a notice from Washington that there was an error in the recent change in the the pilot rules, in relation to signals between the master and engineer. In the rules as amended, the signal for checking, three bells or three whistles was entirely omitted, doing away with that degree of speed altogether. As it is considered a very necessary one in the handling of a boat, local vessel men could not understand why it was knocked out. A circular from the Supervising Inspector General clears up the matter. It was omitted unintentionally, through some unexplainable error. No change is made in the signal, it remaining as before, three whistles or three bells.

The Lake Carriers' Association asks in a bill now before Congress to be reimbursed to the extent of \$20,000 for expenditures made during the past few years in the maintenance of private lights at several points in the connecting channels of the lakes where lights should have been provided by the government. The bill is being looked after by Senator McMillan, of Michigan, who will have the assistance of other members of Congress from the lake districts in trying to bring about its passage. Now it is proposed to apply this \$20,000, if it is paid back to the vesselmen by the government, to the erection of a Poe memorial at Sault Ste. Marie. This suggestion will undoubtedly meet with the approval of all vessel owners, as no engineer ever connected with government work in America was held higher in esteem than the late Gen. Orlando M. Poe.

#### BUFFALO.

*Special Correspondence to The Marine Record.*

The grain rate for winter storage and spring delivery at Buffalo from Chicago and Milwaukee has been cut to  $2\frac{3}{4}$  cents on corn.

Capt. Frank McGlynn, of the Canadian schooner Mont Blanc, died at his home in St. Catharines, Ont., last week, of heart disease.

Capt. Neil Murray, of St. Catharines, died at the hospital at Windsor, on Saturday last. He was injured about three months ago by falling into the hold of his vessel. He was well known along the chain of lakes, having sailed thereon since boyhood.

The firm of Rodgers, Brown & Co., bought the old Lehigh Valley liners Oceanic and Clyde, at a very moderate figure (\$85,000). Intending purchasers looking for tonnage here this week, would have bid a higher price on each boat or taking the two together. About six different people were moseying around trying to close a scale on one boat a few days ago.

The collision case in the Hay Lake cut, St. Mary's river, of the North Star, Capt. Stewart, and the Siemens, Capt. Sunderson, is being investigated by the U. S. local inspectors for the district within which the casualty took place. Contrary to the general impression, the decision of the inspectors in such cases in no way affects the owners or underwriters relative to the subsequent litigation, besides, there is always the right of appeal to the supervising inspector of the district when the licenses are dealt with.

"I consider the Corliss dam scheme premature," said Major Symons of the United States Army Engineer Corps recently. "The matter of regulating the Great Lakes will assuredly continue to engage the attention of marine men and others interested until a practical project is evolved. To hasten a solution of the problem, it seems to me that our government should open negotiations with the Canadian government as quickly as possible for the formation of an international commission. 'The Chicago drainage canal is established, but provision is not made to so control it that the levels of the lakes will not be endangered. This action can best be taken by an international commission. The 'Soo' power canal is partly constructed and no doubt will be completed. This canal, too, should be under control, and also the power canal now in operation on the Canadian side of the 'Soo.'"

It seems that the longshoremen are opposed to the elevator companies handling the grain. For what reason it is not known, but they are prejudiced against it. Then they are flatly opposed to the contract system. There have been but three ways proposed. This is that the lake carriers shall do their own elevating, and shall deal directly with the Longshoremen's Union. Some of the higher officials even claim they have agreed to as much as that. On this score, of course, opinions differ. Some of the vessel men say that while the grain shoveling committee does not desire to antagonize the wishes of the International Longshoremen's Union, they will hardly handle the business this year directly through the shovelers. They claim that a contractor will be selected, but he will be chosen in accordance with the desires of the shovelers. As both sides have shown a disposition to be entirely fair in the matter, it is believed by many that the season will be gone through with without a repetition of last season's trouble.

In spite of the fact that large sales of lumber are being made at all the upper lake ports and the indications are that the season's shipments from the Lake Superior district will break all previous records, the vesselmen and shippers are still sparring over rates. Very little lumber has been covered by charter and the rate from ports at the head of the lakes to Lake Erie ports has not been definitely fixed. The lumber men could, no doubt, charter a number of tows on season contracts at \$3.50 from the head of Lake Superior. They do not appear to be in a hurry to take tonnage at that figure. Vesselmen will not tie up for less and the rate is no nearer settled now than it was a month ago. There is an indication that much lumber tonnage will still change hands before the opening of navigation, as buyers are very eager. This has set up the ideas of owners and as a rule they are asking as much for their vessels as they cost when they were new. This of course is just as it should be in view of the season's outlook for freight rates.

Robert Learmonth, when he resigned his position last Thursday as chief engineer of the Anchor Line, had no idea of the surprise awaiting him. He had rented a business office in the White building, and when arranging for furnishing it, he was met by the engineers of the Anchor Line and escorted into the office of the Steamboat Inspection Service. There he was told the engineers so appreciated his intercourse with them during the seventeen years he had been their chief that they had furnished his office as a gift. Mr. Learmonth managed a short reply in thanks, but it took all his nerve to keep up. The office is furnished with roll-top desk, swing chair, dictionary stand, etc. Mr. Learmonth has resided in Buffalo over forty years and was thirty years of age when he left Scotland to settle here. Preceding his connection with the Anchor Line, he was superintendent of the old rolling mill of Pratt & Company, at Black Rock, and afterwards in the government Steamboat Inspection Service. His successor as chief engineer of the Anchor Line is Charles J. Fox, first engineer of steamer Mahoning, and who has been with the Anchor Line for seventeen years.



### CAPT. ALEX. McDOUGALL—MISSISSIPPI RIVER COMMERCE.

The people of St. Louis believe that the old palmy days of the Mississippi river are to be restored, and through the invention of a Duluth shipbuilder, Capt. Alexander McDougall. The St. Louis Republic of Saturday contained the following article, which will be of interest to lake people generally:

"The long-cherished dream of St. Louis shippers of a light draft steel barge line between this city and New Orleans is about to be realized, and the last dollar needed to put the plan in practical operation has been raised, and a company formed to push the enterprise.

"At a meeting held Thursday afternoon at the Noonday Club the company was formally organized and plans discussed at some length. Alexander McDougall, of Duluth, Minn., the inventor of the whaleback steamers on the lakes, exhibited a number of models and explained his ideas in regard to adopting modern methods, machinery and appliances in river transportation. He demonstrated the feasibility of operating barges between St. Louis and New Orleans at all stages of the river.

After carefully going over the plans it was decided that the company would erect its own plant and build both its barges and towboats in St. Louis, and a committee was appointed to select a suitable location.

"Henry S. Potter, who was instrumental in raising the money and organizing the company, was elected president, Alexander McDougall, vice-president and general manager, and D. R. Francis, John Scullin, Festus J. Wade, I. H. Lionberger, Rolla Wells, Howard Elliott, James Campbell, John Fowler, Henry S. Potter and Alexander McDougall directors.

"The company will be named the St. Louis Steel Barge Company, and will be incorporated for \$110,000, but the capital stock will be increased as soon as the barge line is put in operation. Work on the barges and towboats will be begun at once, and the company expects to have a towboat and two barges completed in time to handle the new crop of grain.

"Mr. McDougall, who has had many years' experience in steam navigation, intends to inaugurate several new features in connection with the barge line, which promises to revolutionize river navigation.

"Instead of using paddle wheels the towboats will be operated by large screw propellers on shafts, which can be raised or lowered to suit the varying depths of water and at the same time obtain the greatest possible propelling force. Each barge will be equipped with independent steering apparatus, so that in passing through a narrow channel they can go in single file. A number of other innovations will also be adopted, among which will be the pulling of the tow as is done on the lakes, instead of pushing it, as is now done in river navigation.

"A number of attempts have been made to organize a steel barge line, as it was admitted by grain men and shippers generally that the inauguration of a line of light draft steel barges that would practically insure an all-water route to the Gulf throughout the entire year would prove the salvation of the grain trade and jobbing interests of St. Louis, but heretofore all attempts have failed.

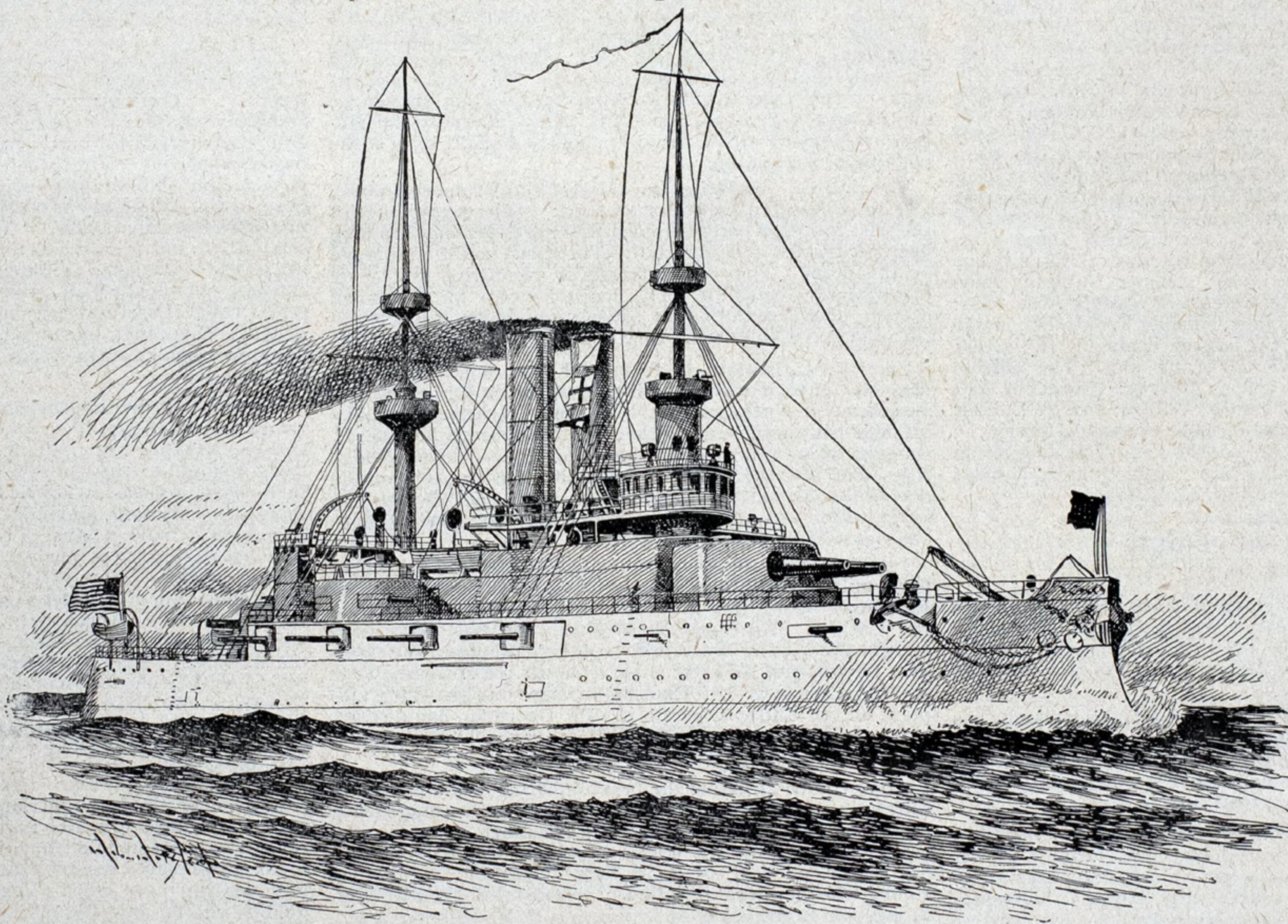
"Just before the breaking out of the war with Spain arrangements were made by Web. M. Samuel to form a company, but when the war was declared the moneyed men be-

hind the scheme decided to wait developments, and the matter was allowed to rest.

"Henry S. Potter, however, started a quiet investigation on his own account, and in company with Mr. McDougall made a number of trips up and down the river between here and New Orleans, making charts of the channel and investigating the feasibility of the plan. By hard and persistent work Mr. Potter finally succeeded in overcoming all obstacles and raising the necessary amount of money to put the plan in operation. He interested the Burlington railroad officers in the idea, and they will not only furnish their share of the money to put the plan in operation, but will do much to bring the grain and other freight to St. Louis to make the barge line a financial success.

"The inauguration of the barge line will insure an all-water route between St. Louis and New York, as well as the leading Mexican Central and South American and European ports, and when the Nicaraguan canal is opened will give St. Louis an all-water route to the ports of the world. This will mean an immense advantage to St. Louis merchants over their competitors in other cities, and will revolutionize freight rates to and from this city."

Capt. McDougall confirms the foregoing, he says he shall probably give up his vessel agency in Duluth and his business partner, W. A. Thomson, will go to St. Louis in connection



U. S. S. BATTLESHIP "ILLINOIS."

Under construction at the yards of the Newport News Ship Building Co. Displacement, 11,565 tons. Dimensions, 368 feet in length; 72.2½ feet beam and 23.6 feet draft. Tonnage, 5,144. Twin Screw, 10,000 I. H. P., 16 knots.

with the new river steamboat company. The captain says that the gentlemen in the new company are among the wealthiest and most progressive men in St. Louis. He has recently bought the machinery of the shipyard at Everett Wash., and Robert Patterson of Duluth, is now there for the purpose of shipping it to Collingwood, where it will be used in the new shipyard in which Captain McDougall is interested, the Collingwood Ship Building Co.

### MARINE PATENTS.

Patents on marine inventions issued Mar. 1, 1900. Reported especially for the MARINE RECORD. Complete copies of patents furnished at the rate of ten cents each.

644,093. Marine air compressor. J. F. Place, Glen Ridge, N. J.

644,405. Bascule lift-bridge. J. P. Cowing, Cleveland, O.

644,457. Dredger. W. B. Pless, San Francisco, Cal., assignor of one-half to P. F. Dundon, same place.

644,480. Device for preventing ships from sinking. F. L. de Villa, Guatemala, Guatemala.

644,508. Propeller reverse-gear. F. A. Errington, New York, N. Y.

644,521. Rotary dredging and excavating machine. Dennis Jordan, San Francisco, Cal.

### A WHALEBACK MODEL FOR A BATTLESHIP.

The armored battleship Henri Quatre, recently launched at Cherbourg, France, is built on the plan of the whaleback steamers familiar to the commerce of the Great Lakes. The displacement of the vessel is 8,948 tons. She has a high freeboard forward, with a long, high superstructure amidships, and a low freeboard aft above the foremost turret. She has a belt of 11¾-inch armor at and above the water line, and above this a belt of 4-inch armor. The armor of the two turrets is 11¾ inches thick, and the deck armor is 2 inches thick, extending downward and inward, below the belt armor, with the idea of affording some protection against torpedoes. The vessel will have triple screws, driven by engines aggregating 11,000 h. p., and the estimated speed is 17 knots. Her normal coal supply is 725 tons, with provision for carrying 1,100 tons in event of emergency. Her crew will number 435 officers and men. Her main armament will consist of two 10.8-inch guns, each in a turret, forward and aft, and seven 5.5-inch, quick-firing guns. Four of the latter will be protected by 4 inches of armor, while the other will be under a shield high enough to permit the gun to fire over the roof of the after turret.

It is not so long ago that some enterprising genius sug-

gested that, for quickly stopping vessels at sea when in danger of collision, a form of marine brake might be used which in its essentials, should consist of large wings or vanes hinged to a ship's sides below the water line, folding closely to those sides when not in use, but capable of being swung out at right angles when needed, in which position their resistance to the ship's forward movement would be instantaneous and highly effective. A few discouraging attempts were made with a contrivance modeled somewhat after this pattern, but it is interesting to recall that more than 30 years ago substantially the same idea was embodied in a patent for a railway train brake granted in Great Britain. The brake proper in that case consisted of a large vane, extending across the roof of a railway coach, and so hinged that it could be raised to an upright position by means of ropes and a large nut traveling along a screw,

which latter could be turned as desired by a train attendant. The vane, in its upright position, of course, added in a more or less appreciable degree to the atmospheric resistance encountered by the train, and upon this the theory of its action was based. With over a quarter of a century's progress in railway brake development to look back upon, this early winged contrivance seems like the outcome of a childish fancy, but even at the time of its proposal there appears to have been no evidence to show that it was ever put to trial. —Cassier's Magazine, for February.

THE Kearsarge, the largest and most powerful warship owned by the United States government, is to become the flagship of the North Atlantic squadron, to take the place of the cruiser New York. It is said the change will be made as soon as the squadron returns to the North from its cruise in the tropics. Preparations are now being made at the Brooklyn navy yard to make the change, an order with this object in view having been received from Washington. The New York has been the flagship of the North Atlantic squadron since before the Spanish-American war. The reason given for the change is that the cruiser is in need of repairs.



## ICE-BREAKING STEAMERS.

FROM NOTES ON NAVAL PROGRESS.

During the spring of 1899 the ice-breaking steamer *Ermack*, by her wonderful work in conveying into Russian ports on the Baltic a large number of ice-bound vessels, suggested the possibilities of this class of craft as a factor in naval affairs. Although the pioneer ship *Britannia*, of the Cunard line, on account of an experience with ice in Boston Harbor in 1844, lays strong claim to the honor of being the first ice-breaker driven by steam, the first steam vessel especially built for this purpose appears to have been the *Pilot*, belonging to the port of Cronstadt. She was a small, single-screw tug, having very sharp lines and great rise of floor, and fitted with a bow fashioned in such a way that the vessel could be forced up on the ice, breaking it down by her weight.

The Hamburg authorities soon built similar vessels for the Elbe, such as the *Eisbrecker I*, of 600 I. H. P., in 1871, and the Scandinavian countries followed with ice-breakers and ice-breaking ferry steamers, propelled by paddles and by single or double screws. The *Sleipner*, at Copenhagen, of 1,400 tons and 2,600 I. H. P., had the forefoot cut away from a point on the stem above the water line in a slanting direction, and striking the keel about one-fourth the vessel's length from the bow, thus naturally facilitating the mounting of the vessel onto the ice field.

The discovery was made in America that by going astern

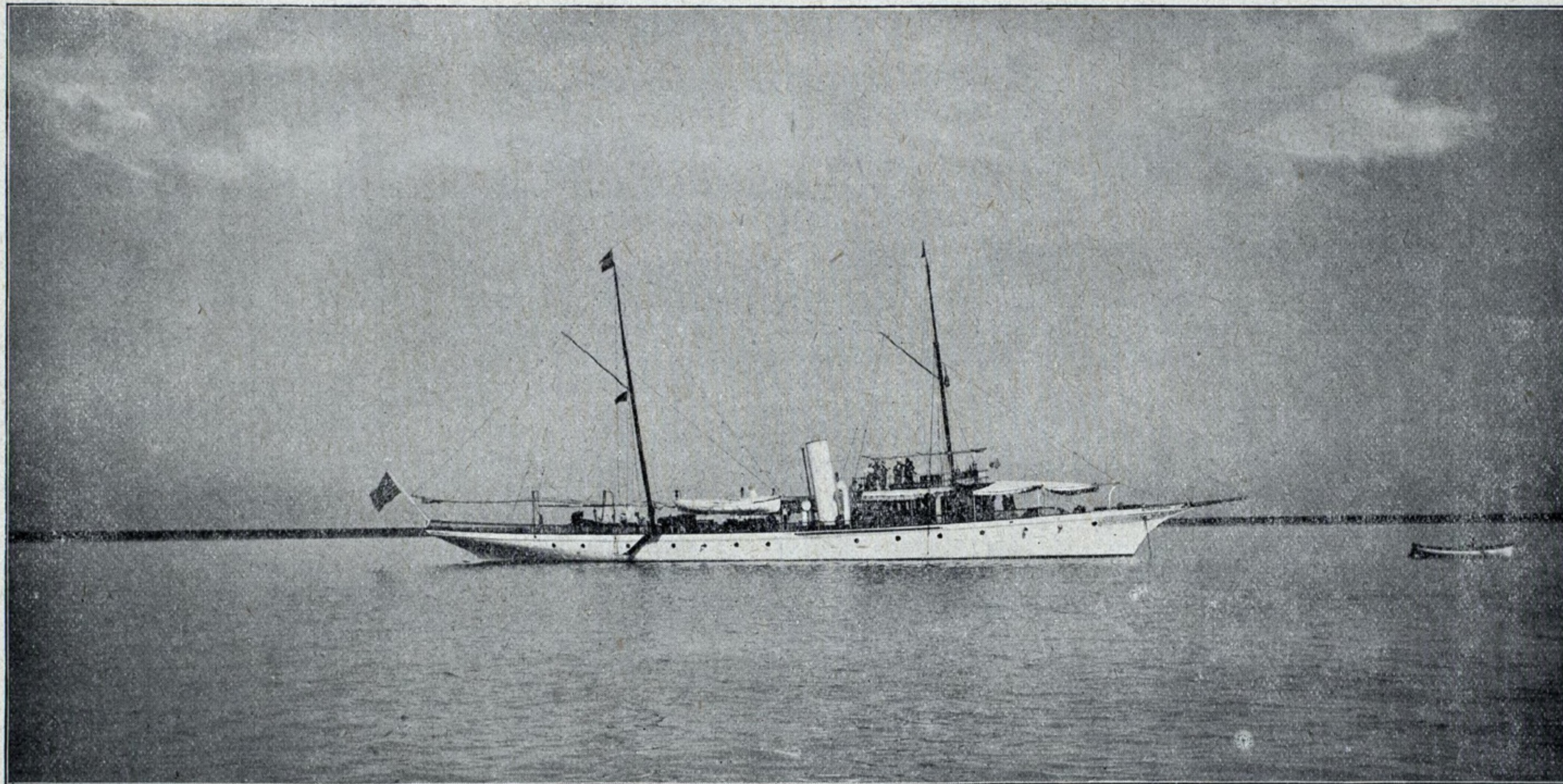
mainland of Canada, has recently (August, 1899) made her trial trip on the *Tay*, attaining a speed of 16.25 knots. She is 225 feet long, 32 feet 6 inches beam and 20 feet 6 inches molded depth, fitted with water ballast in cellular double bottom and in large, deep tank to 'tween deck aft, for giving her the proper ice-breaking trim.

Fully three times as powerful as any vessel previously constructed, the *Ermack*, designed by Vice-Admiral Makaroff, of the Russian imperial navy, and built last year in England by Messrs. W. G. Armstrong, Whitworth & Co. for the Russian government, deserves particular study, by reason of the novel features in her construction. Her principal dimensions are as follows: Length, 305 feet; beam, 71 feet; depth to upper deck, 42 feet 6 inches. At no point are the lines of her hull straight, thus assisting in disengaging her from fields of ice when there is danger of her being frozen in. This form of hull and the great strength of the structure would result in the ship being lifted bodily rather than giving way, in case the ice closed about it. The strength and rigidity of the hull are so great, in fact, that if the ship should be suspended by the bow and stern without any intermediate support no damage could ensue. The heavy web framing and the plaiting of the ice belt, extending entirely around the hull, like the armor of a modern warship, with a maximum thickness of of  $1\frac{1}{4}$  inches, render the outer skin impregnable to attacks of ice.

The *Ermack*, like her early precursor, the *Pilot*, has her

the rudder. The bow screw is not introduced for speed purposes, but simply to enable the ship to clear her way and keep lumps of ice from accumulating under her bottom. All four propellers are four-bladed, made of nickel steel, and enormously thick, being calculated to be brought up by ice without breaking when running at full speed. The machinery is all designed to withstand this test.

The vessel is divided into 48 absolutely water-tight compartments, of which 14 are in the double bottom. There is one cross bunker for coal, as well as side bunkers. The fore and after peaks are arranged for trimming purposes, so as to bring the vessel by the head or stern with water ballast. There are also two heeling tanks amidships. In case the ice crowds the ship on one side, the tank on that side can be filled and an extra pressure of some hundreds of tons brought to bear on it so as to right the ship and crush the ice down into the water. Both tanks would be filled if it were found that the ice was raising the ship bodily. The weight and shape of the *Ermack* would make her roll considerably in a sea way, and she cannot have bilge keels, since they would afford a grip hold for the ice; therefore she has also been provided amidships with a third or antirolling tank. Connected with these tanks are pumps of enormous power, so that if the vessel gets caught in the ice her horizontal plane may be varied in any sense desired, whereby she can the more readily release herself. The pump room is a well perfectly water-tight, let into the middle of the vessel and



STEAM YACHT "SENTINEL."

with single screw steamers the disturbance of the water by the propeller had a disrupting influence of an important character. Consequently the *St. Ignace*, 1,200 tons, built in 1888, and the *St. Marie*, built in 1893, for service on the Great Lakes, were each provided with a bow propeller. The *Sampo*, built for the Finnish government, of 2,000 tons and 3,000 I. H. P., has one propeller aft and another forward, and her chief dimensions are: Length, 202 feet; beam, 43 feet; depth, 29 feet 5 inches. Her contour is such as to strike the ice at a very acute angle, so that when the vessel is driven with considerable force she has a tendency to rise on the ice in a slanting position, which, while it conduces to bringing her maximum weight to bear, does so in a manner which mitigates the blow to the vessel herself.

Near the town of Saratoff, on the river Volga, a ferry steamer with four lines of rails for railway cars, not only contends with ice but with varying heights of water; she is assisted, moreover, by an ice-breaker of the ordinary type. There is now also under construction on the shores of Lake Baikal a vessel of 4,200 tons, 290 feet long, 57 feet beam and 28 feet 6 inches deep to the rail deck, designed to ferry the Siberian railway cars a distance of 40 miles. The *Minto*, an ice-breaking steamer, built by Messrs. Gourlay Bros. & Co., Dundee, for the Canadian government's winter mail and passenger service between Prince Edward Island and the

bow designed with a very long overhang, so that the attack on the ice takes the form of a sliding blow, and if the resistance encountered is more than sufficient to overcome the breaking strain thus produced, the momentum of the vessel is expended in lifting the bow on to the top of the ice; meanwhile the water supporting the ice is violently disturbed by the action of a propeller arranged under the cutaway bow, so that under the effect of the weight of the vessel acting above and enhanced by absence of support below the ice gradually yields. The action thus described will take place continuously when working in thick ice. The foremost part of the bow is composed of a solid steel casting. Three screws are placed at the stern, one being on the center line as in ordinary single-screw vessels and the other two as in the usual twin-screw arrangement. The four screws are arranged so that large blocks of ice may be carried clear of the hull or out of the way of the advance of the vessel by means of the current or race due to their working. It is hardly necessary to say that an ice-breaking steamer, to be effective, must have remarkable manœuvring powers, as vessels working in frozen seas have the very smallest space to turn in at times. For this reason the twin-screw arrangement was desirable, but with twin screws the efficiency of the rudder may be lessened, as the propeller race is not thrown directly upon it, as is the case with one screw working directly forward of

descending to within 7 feet of the bottom. The salvage pump has a capacity of 10 tons per minute, and if the ship were flooded above the level of this pump, the latter would be still accessible. The ballast pump is arranged so that it can take hot water from the boilers and pump it into the fore peak, the hot water overflowing through valves in the bow and running down the outside of the skin plating. This is designed with the purpose of preventing rough ice from adhering to the hull.

At the stern the vessel is shaped much like a cruiser, but instead of being rounded off has a deep groove, furnished with fenders, intended to receive the stem of another steamer of the ordinary type in conducting her safely through the broken ice. By means of a powerful winch the second steamer may be braced up taut, and thus be enabled to add her power to that of the ice breaker in struggling with the ice.

Another interesting feature is the so-called ice box, an open tube amidships from the main deck down to the water under the ship's bottom. Through this the boilers are fed with water direct from the sea beneath. This tube is connected with a glass pipe set against a wooden scale on which are marked on one side the number of feet that the vessel is

CONTINUED ON PAGE 12.





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CHICAGO can, of course, use the controlling works at Lockport, should necessity require, instead of making a cofferdam by spanning the river with a cargo boat. Even with this knowledge aboard, it would be as well for vessel owners to supply their vessels with a couple of spare tow lines when chartering for that "burg."

ONE of the oldest and most enthusiastic advocates of a ship canal from Georgian Bay to Lake Ontario, E. A. MacDonald, Mayor of Toronto, addressed the Board of Trade of that city recently on the project. He said that the cost would be less than \$30,000,000. The distance is about seventy miles, and the route is declared easy for construction and plenty of water supply for locks.

AN expression from the Navigating Committee of the Lake Carriers' Association, relative to the status of Chicago as a general and deep water trading port, would, about now, be in order. Lake marine underwriters are unusually keen business men and they might insert just two words in a season blanket policy that would mean a great deal to owners, shippers and consignees. The new policies are not yet published, but when they are, if there is a few letters in parenthesis, slipped in somewhere, reading something like this, (except Chicago) no surprise need be felt by those most nearly interested. There are many lake vessels that could not stand being hung up at both ends and made lock gates of, even in still water, and much less so against a strong current. It is safe to say that underwriters will watch their own best interests, the Chicago capitalists' sewer to the contrary, notwithstanding.

THE easiest way for Chicago to avoid a host of damage suits this summer will be for that port to charter a small fleet of powerful tugs with full and complete towing and lightering outfits. We would also advise having in stock and at hand, a number of patent flexible steel wire, also coir, manila and hemp tow ropes in addition to the regular equipment. The foregoing, with the addition of plenty of steam power and one or two floating grain elevators, would no doubt tend to greatly minimize the losses in the earlier part of the season, other measures could then be taken for more adequate and permanent aids to, and for the river traffic—such as lowering the several tunnels now crossing the river, taking away all center pier bridges, widening the river, changing dock lines and rebuilding slips, etc. It is quite certain that all hands will register one grand universal kick if there is any humbuggery experienced on the opening of navigation, and as sure as anything there will be.

## THAT DAM AT NIAGARA—THE CORLISS BILL.

An anonymous, type-written circular letter has been sent out this week from Chicago signed "A Vesselowner," and, as it has reached the offices of publishers, some one having an acquaintance with the newspaper directory has no doubt "had a finger in the pie."

We quote from a portion of this letter as follows:

"I appeal to you to at once write to your Congressman to see the Hon. J. B. Corliss and encourage him in his great work, also the Committee on Rivers and Harbors, and impress upon them the importance of reporting out this bill. \* \* \* Please do not lose one moment in taking this subject up or it will be too late, for if this bill is delayed or dies in the committee, and work is not at once commenced on the proposed dam, I shudder for the consequences."

It naturally occurs to ask, Why this undue haste? What is there to be shuddered at? How is Chicago so vitally interested in the Niagara River dam project? Who is this anonymous protector of the surface levels of the lakes? These and a score of other questions of similar import might be asked with some degree of pertinency at this time.

In connection with the work which the RECORD has performed during the past few months, we may say that there seems to be a misunderstanding in the minds of some people interested in lake navigation in regard to the Corliss bill for a dam at the foot of Lake Erie. This bill as it was introduced provided for a dam entirely shutting off the navigation of the Niagara River and the ports of Black Rock and the Tonawandas. It made no provision for a canal around the dam. It did not have the sanction and approval of the Deep Waterways Board nor of any member of that board.

That it was a very poor and premature bill is shown by the fact that at the hearing in Washington, before the River and Harbor Committee, Mr. Corliss himself suggested an amendment to the bill striking out the appropriation for the dam, and providing instead an appropriation of \$50,000 for an investigation into the possible and probable effects of building the dam.

Mr. Wisner argued in favor of the dam, but coupled with it the necessity of building about it a canal with a lock, which canal would cost two or three times as much as the dam itself. This is the real project of the Deep Waterways Board of Engineers, and not the Corliss Dam project as exploited in his bill.

Maj. Symons argued against the Corliss bill, but as he stated, not from any hostility to the project for regulating lake levels by such a dam, but because the bill was incomplete in that it did not provide for a canal as well as a dam. He stated that the canal should be built before the dam in order that the navigation of the Niagara River should not be interfered with or interrupted. Major Symons also objected to the bill for the reason that it would change existing conditions at Buffalo, Cleveland, Erie and all other Lake Erie ports, and the people interested had never had an opportunity to study the bill and consider the results of the dam. He stated that he could see many advantages of the regulating dam, but at the same time could see disadvantages, and thought the matter should be carefully weighed and all interests consulted.

Moreover, Maj. Symons thought that as it was of necessity an international question, it should be referred to an international board for consideration.

At the meeting in Washington no one appeared from the Lake Carriers' Association in favor of the Corliss bill, and in fact, no one at all appeared in favor of the bill as it was introduced, not even Mr. Corliss himself.

There is a prevailing notion that the building of the dam at the foot of Lake Erie to raise the level of the water two or three feet, would raise the waters in Lakes Michigan and Huron and compensate in some degree for the waters taken out by the Chicago Drainage Canal. There is very little ground for any such opinion, as Lakes Huron and Michigan are fully eight feet above Lake Erie, and how a dam which would raise Lake Erie two or three feet could have any appreciable effect on Lakes Huron and Michigan is difficult to understand. The dam may be necessary to compensate Lake Erie for the deficiency in the natural flow due to the Chicago Drainage Canal deflection, but it can have no effect on the level of waters of Lakes Michigan and Huron.

There is also a notion prevalent to some extent that the low water in Lake Erie during recent years is due to the excavations made in the channel of the Niagara River. Now, while it is true that some six or eight years ago there was some rock taken out of the channel at the head of the Niagara River, (just as there was at the Lime-Kiln Crossing)

yet this was very small in quantity, and has had but little effect on the waters of the lake. The real reason for the low water is the fact that we have been passing through one of the times of low water which occur periodically, which always have occurred, and which always will occur as long as nature is left to work her will on the lakes. This rock was removed from the upper Niagara River some years before Major Symons went to Buffalo, and it is understood that he has always opposed any more rock being removed from the channel without the proper works being put in to compensate for it in the flow of the river, and, in the same manner as the late Gen'l O. M. Poe carried on his work at the mouth of the Detroit River.

Let our scientific hydraulic engineering experts prove, what raise, or head of water, would be required at the mouth of Niagara River, to force a raise of even an inch or two at the Lime-Kiln Crossing, against moderate westerly winds and weather, at the only time when the depths are scant in that vicinity.

LIEUT. GELM, U. S. N., in charge of the branch Hydrographic Office in Chicago, expresses the opinion that the current caused by the opening of the drainage canal will not seriously impair navigation in the Chicago river if the tunnels are lowered and the center pier bridges removed. This is very assuring and gratifying information from the Hydrographic Office. By-the-way, it has been widely noised around this week that the Hydrographic Office would soon have to get out new charts of the Chicago river. How far up the river does the jurisdiction of the Navy Department extend? If Corporation Counsel Walker can get the measure before the council, an ordinance might be framed requiring the street railroad companies using the tunnels crossing the river to rebuild them, so as to no longer impede navigation, or rather, to permit sufficient flow of water to supply the drainage canal, but even then, and, whenever the ordinance is passed, it will take a full year at least to drop the tunnels a couple of feet. There is the Van Buren, Washington and La Salle street submarine archways to reckon with and the work is one not easily accomplished.

OH, but that ubiquitous Board of Supervising Inspectors of Steamboats put their feet into it everywhere. At the last annual meeting, held a few weeks ago in Washington, they revised an amended amendment, and made themselves, also the Secretary of the Treasury, say port when they meant starboard, or vice versa, it matters little which. Then they revised the code of signals between the master and engineer in accordance with the suggestion of a Cleveland vessel manager, but they revised it so as to leave out the checking signal altogether. It was also understood that lake barges of 700 tons and over, carrying canvas, did not need a licensed master, but the examination has been put to a couple of them. One of the brilliant constellation of talent, yclept, the U. S. Board of Supervising Inspectors of Steamboats, ordered his local inspectors to convey information that the MARINE RECORD had written for and worked, up to be given to another periodical, thus turning his locals, pro tem, into reporters. Then, these little matters are laughed off with that idiocy of ignorance as if to the manor born. A wonderful bureau, truly!!!

REPRESENTATIVE STEWART, of Wisconsin, has this week introduced resolutions of the Federated Trades Council of Milwaukee, Wis., asking for legislation to increase the requirements and qualifications of seamen and firemen on the Great Lakes. The resolution was referred to the committee on the Merchant Marine and Fisheries. The question arises, wherein have lake seamen and firemen been found so generally deficient in the requirements and qualifications called for. Perhaps the Federated Trades Council of Milwaukee would like to see the seamen and firemen undergoing a competitive compulsory examination so as to prove their superior attributes, but why for?

THE two problems now agitating the engineering world of Great Britain and the United States seem to be of the same type, and they relate to the feasibility of petroleum for fuel on the torpedo boat, and the value of the submarine torpedo boat. Neither question has advanced much beyond the experimental stage, and the results thus far are far from satisfactory in either matter. The position of the submarine torpedo boat has received somewhat of a setback by the lately promulgated adverse report of the Board appointed by the United States Navy Department, and the future of submarine warfare remains about where it was at the beginning—a matter of opinion.



## LAKE LEVELS—CHICAGO CANAL.

An anonymous communication in type written form, dated Sunday, March 4, postmarked Chicago and signed "A Vesselowner," was found in the RECORD's mail on Monday morning. The screed went the way of the unsigned, more especially as it contained some wrong statements and scurrilous allusions to the engineer in charge of the government work within the Buffalo district.

Quite a strong sentiment has developed within the past few weeks on the subject of trying to maintain the level of the lakes by placing remedial or controlling works at a point in Niagara river, and it has more than once been hinted that the bill introduced by J. B. Corliss, of Detroit, to place a dam at Niagara, was, in some manner, strongly linked with the Chicago drainage canal enterprise, and possibly, though in a less trenchant degree, with that of the "Soo" power canal project.

We now find that several papers have printed nearly the entire anonymous communication, it is our province, therefore, to reprint a portion of the letter, so that those more nearly interested may see the evident conjunction existing between the capitalists concerned in the Chicago drainage canal and the promoters of the Corliss dam scheme.

"The bill introduced by Hon. J. B. Corliss, of Detroit, providing for the erection of a regulating dam in the Niagara river, at the foot of Lake Erie, to maintain a uniform depth of water in all harbors, no matter what the conditions are, or the effect the Chicago drainage canal may have on the lake levels, is now before the House Committee on Rivers and Harbors.

\* \* \* \* \*

If this bill is delayed or dies in the committee, and work is not at once commenced on the proposed dam, I shudder for the consequences. Chicago has opened her drainage canal, through which 40,000 cubic feet of water per minute is now being drawn, with the expectation of increasing to 80,000, to protect health and sanitary conditions. The forests have largely been cut off, and every indication is that for the next two years the evaporation from the lakes will be great, and the source of supply unusually small. Any man can figure for himself the consequences: Take 40,000 cubic feet alone per minute, and divide the number of surface square feet in the lakes by this sum, and you will find that within two or three years the lake levels must be drawn down nearly two feet, just as certain as the drawing off of the waters from the smallest mill pond, or wash bowl, unless you curtail the outlets.

Whatever time it takes to lower the lakes, it will take an equal time to restore them after the outlets are controlled; consequently I predict to an absolute certainty that unless something is done at once to husband these waters, by the spring of 1901 many large vessels will be aground and unable to get to their docks, and great injury done to the marine interests of the Great Lakes for at least a year, as it will surely take that time to restore them to their normal level. For every month that this work is postponed, 1,728,000,000 cubic feet of these precious waters are being drawn off, without an adequate curtailment at the other end, which is absolutely necessary, or great damage will be done, which will take just as many months or years to restore as there are delays in attending to it.

A VESSELOWNER.

Chicago, March 4.

The foregoing seems to be a very plausible rendition of a quite possible result, although we must not forget the anonymous part of it. Hiding under the nom-de-plume of a Chicago vesselowner comes forth this Daniel in judgment, having succeeded in permitting, by his acquiescence, the boring of an artificial outlet from the lakes, or the forming of a second bunghole to a cask, he now argues that the natural outlet must be dammed, or that the regular and natural bunghole should be made smaller.

It appears very clearly that "the man afraid to sign his own name" is bound hard and fast to the Chicago drainage canal and its stolen outflow of lake water; it is equally as clear that he is committed to the Corliss Niagara dam scheme and it seems quite as apparent that he is not a vesselowner, or he would have raised his "vice" earlier. All of which goes to show that the great American hog still finds subsistence to exist, and that his successful existence runs parallel to and equals the number of suckers he can hoodwink and humbug into his way of thinking. The Niagara river has been as it is for centuries, the Chicago drainage canal has hardly yet been opened. Keep an eye on the latter, the former has been watched. The Chicago canal is the tail end of the subject, not the body.

## NEW CHARTS FOR CHICAGO RIVER.

Lieut. Gelm, U. S. N., in charge of the United States branch Hydrographic Office at Chicago, expresses the opinion that the current caused by the opening of the drainage canal will not seriously retard navigation in the Chicago river if the tunnels are lowered and the center pier bridges removed. He says the changed conditions will make it

necessary to prepare an entirely new set of hydrographic maps and charts of the Chicago river for the guidance of shippers. The charts now in the possession of the government have been rendered valueless by reason of the recent alteration of levels and the introduction of a current into the stream. In speaking of the possible dangers to navigation under the new conditions Lieut. Gelm said:

"The current will not affect navigation to any great extent after we have become accustomed to the changed conditions. By using heavy lines, powerful tugs and the precautions usually exercised in navigating tide waters there should be but little difficulty experienced. I assume that the current in the river will not average more than two miles an hour, and if this be true there is little cause for alarm. In the East river, New York, and at Hampton Roads and many other ports where there is tide water, the current often reaches four or five miles an hour and still the boats manage to navigate with but little difficulty."

## BIDS FOR A REVENUE CUTTER.

Bids for building a revenue cutter for the Great Lakes were opened at Washington a few days ago by the chief of the revenue cutter service. They were as follows:

Chamblin & Scott, Richmond, Va., \$163,500, to be completed twelve months from date of contract; the William R. Trigg Co., of Richmond, Va., \$157,000, on or before May 28, 1901; the American Ship Building Co., Cleveland, \$250,000, on or before May 1, 1901; the Townsend & Downey Ship Building and Repair Co., New York, \$151,000, twelve months from date of contract. The award will not be made for several days.

The figures submitted by the American Ship Building Co. show clearly that they have contracts booked well ahead; furthermore, that enough of this departmental work has been constructed on the lakes to prove to builders that it is necessary to allow a fairly liberal margin for extra expenses on governmental work.

## STAGE OF LAKE SUPERIOR LEVELS.

J. H. Darling, of the United States Engineer Office, at Duluth, reports that the stage of water on Lake Superior for the month of February was eight inches higher than during the same month a year ago.

The present stage of water on Lake Superior is the highest on record for this time of the year. The low stage for the year is always experienced about this time and the water is usually at its lowest ebb between March 1 and March 15. Then it begins to improve steadily until late in the summer. The present depth therefore is about the minimum for this year. It would appear that with even a normal amount of precipitation between now and the beginning of summer the stage of water will be higher on Lake Superior this year than last.

## MERITED APPROBATION.

Gov. Roosevelt, of New York, has written a letter to Secretary of War Elihu Root, commending the work of Major Thomas W. Symons, Corps of Engineers, U. S. A., as a member of the State Canal Advisory Board. The letter is as follows:

STATE OF NEW YORK.  
EXECUTIVE CHAMBER, ALBANY.  
FEB. 26, 1900.

Hon. Elihu Root, Secretary of War, Washington, D. C.:

Sir—Pursuant to authority granted by your department a year ago, Maj. Thomas W. Symons, United States Engineer, has acted as one of the canal committee of five appointed by me to draw up a report on the future canal policy of the State of New York. It would be impossible to overestimate the importance of this work, or the importance of the part played therein by Maj. Symons. The report of the committee is a public document of the highest value, and the members have been unanimous in assuring me that their work would have been altogether impossible, at least in the shape it actually took, had it not been for the invaluable service of Maj. Symons. Ruskin somewhere points out that where work is done for the fee it is rare indeed to find it really well done, because all really great work, all work which makes the whole community a debtor, is done by some man to whom the work itself is the reward and the doing of it the fee. Such has emphatically been the case with the work of Maj. Symons. For ten months he gave his spare time to the service of the State of New York without any reward whatsoever, performing a task which probably could not have been performed at all by any other man, and which if paid for would have cost the State many thousands of dollars. The only reward he can be given is the hearty recognition of his disinterested and public-spirited labor. I, therefore, write you to say with all possible earnestness and sincerity on behalf of the people of the State of New York, that at least we most deeply appreciate his services and cor-

dially thank both Maj. Symons himself and the War Department through whose courtesy Maj. Symons was permitted to serve on the committee.

May I have your permission to make public this letter?

Very sincerely yours,

THEODORE ROOSEVELT.

## INVESTIGATING LAKE LEVELS

After holding it under consideration for six weeks the Senate committee on foreign relations decided to favorably report the joint resolution introduced by Senator Platt of New York, appropriating \$20,000 towards the expenses of an international commission which the President has authorized to appoint in co-operation with the government of Great Britain, whose duty will be to report from time to time upon the conditions and uses of the waters adjacent to the boundary line between the United States and Canada, including all the waters of the lakes and rivers whose waters flow by the River St. Lawrence to the Atlantic ocean, and also upon the effect upon the shores of these waters and the structures thereon, and upon the interests of navigation, by reason of their diversion from their natural flow, and, further, to report upon the necessary measures to regulate such diversions. The commission is to be composed of four persons from each country, and it is authorized to employ such surveyors, experts and other persons as it may deem needful.

The necessity for such a commission arises from the numerous schemes for ship canals connecting the lakes with each other by new routes, or connecting the lakes with the ocean, and the proposition for damming the Niagara river in order to regulate the fluctuations of level in Lake Erie and the channels above it. The canals would divert the water of the lakes from existing channels and it is in controversy what effect that diversion would have on the level of the lakes and the existing channels which have been deepened at such great cost by the United States government. The proposed Niagara river dam is intended to bring the level of the lakes up to the high water stage and reduce the fluctuations to a minimum.

At the first suggestion of the scheme for a dam it was favorably regarded by the lake interests, the only question being its practicability. Now that the United States engineers have reported that the scheme, in one of its forms at least, is practicable, other considerations have suggested themselves and there is a desire for more information before further steps are taken to carry it into effect. With the favorable report on the practicability of a regulating dam at the foot of Lake Erie the various schemes for ship canals, which will divert the waters of the lakes from their present channels, have developed new activity. At the same time strong protests have been made from both sides of the international boundary that the damming of the lake will threaten the low lands with destructive inundations. It is evident that the proposed dam cannot be constructed without the co-operation, or at least assent, of Great Britain, as the waters affected are Canadian as well as American.

The same international character attaches in greater or less degree to the ship canal schemes, and therefore an international investigation is proper before either of them is carried into effect. The Chicago drainage canal, which it is proposed to convert into a ship canal connecting the lakes and the Gulf of Mexico by way of the Mississippi river, obtains its waters from Lake Michigan, which is wholly within United States territory, but it is yet to be determined whether it will not appreciably affect the level of the lakes and connecting channels that are partly Canadian. The proposed Canadian canals from Georgian Bay to Toronto and from Lake St. Clair to Lake Erie will divert water from lakes and rivers that are both American and Canadian. The canals proposed from Lake Erie to the Ohio river, whether it be that which Pittsburg has set its affections on, or the two for which the Ohio legislature gravely asked the favor of Congress, will divert some of the water of the lakes from the St. Lawrence to the Mississippi route to the ocean. The \$62,000,000 state ship canal to New York, or either of the ship canal routes to that city reported on by the United States engineers, will also divert water from the St. Lawrence route to the Hudson river route to the Atlantic.

Either of these proposed ship canals will divert water from an international channel, and is therefore a proper subject for international investigation. They all tend to lower the depth of water in existing channels and in harbors along the lakes, and for that reason ought not to be permitted until their probable effect on the lake waterways has been thoroughly investigated. For these reasons it is to be hoped the proposed commission will be speedily authorized and get to work.—Editorial, Cleveland Plain Dealer.

## NOTICE TO MARINERS.

LIGHT-HOUSE ESTABLISHMENT,  
OFFICE OF THE LIGHT-HOUSE INSPECTOR, 9TH DIST.,  
CHICAGO, ILL., March 1, 1900.

CLOSING OF CEDAR RIVER LIGHT STATION—Notice is hereby given that the Cedar river, Michigan, light station has closed for the winter.

By order of the Light-House Board.

F. M. SYMONS, Commander, U. S. Navy  
Inspector 9th Light-House District

Review on Appeal.—Where an award made for salvage services is based on correct principles, and is not clearly exorbitant, it will not be interfered with on appeal, although it may be greater than the appellate court would have allowed. The Thornley, 98 Fed. Rep. (U. S.) 735.



## Chicago Nautical School

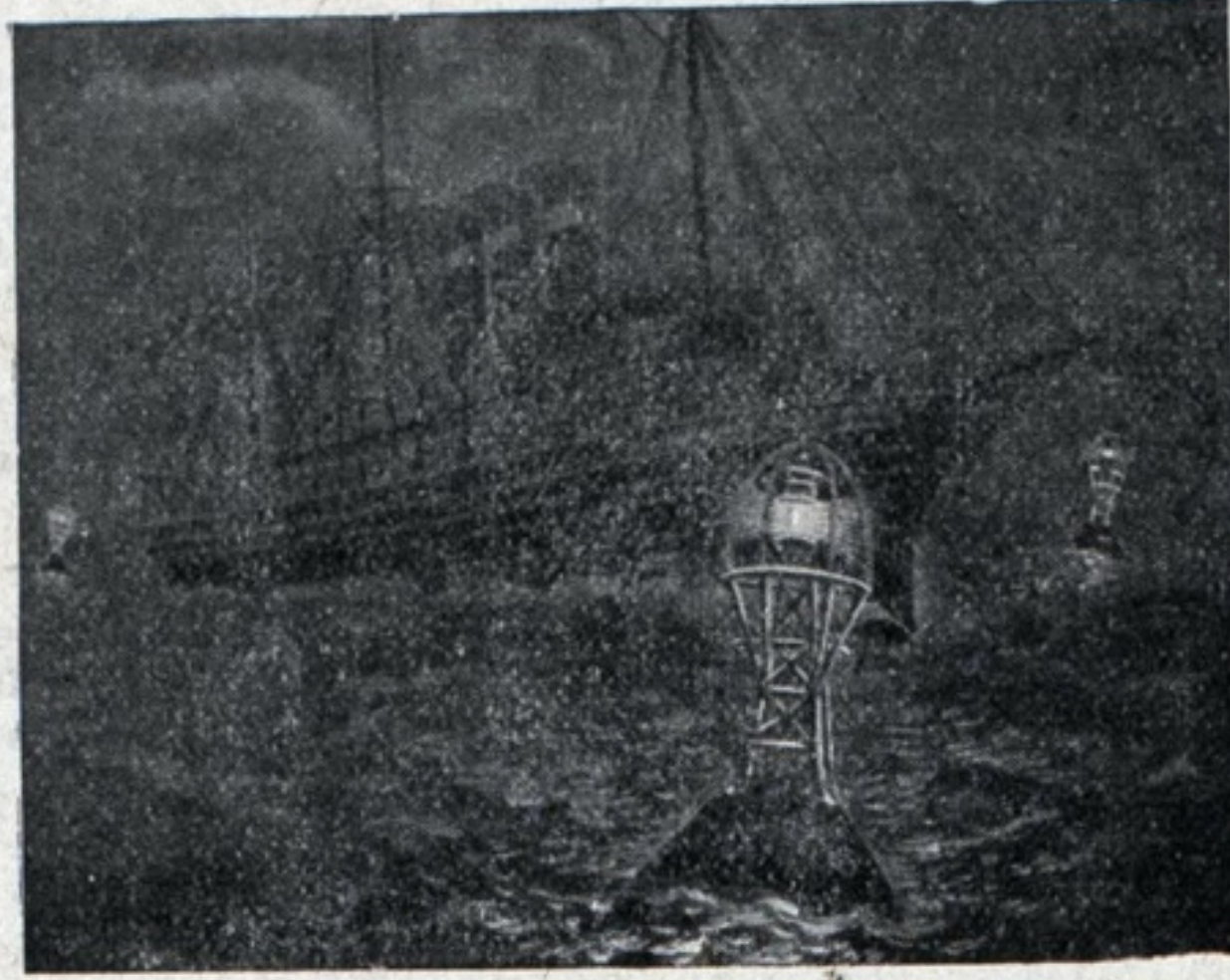
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### ICE-BREAKING STEAMERS.

CONTINUED FROM PAGE 9.

drawing, and on the other the number of tons which the ship displaces at that draught. The total displacement of the Ermack is 8,000 tons; indicated horse-power of the engines, of which there is a set of the triple-expansion type to each propeller, 12,000, giving a maximum speed, it is understood, of 16¼ knots. The results of the steam trials showed that the speed with 8,000 I. H. P. was nearly 15¼ knots.

Experience with the Sampo and Ermack has shown that pack ice of practically any thickness can be negotiated, and in the case of the latter vessel, she on one occasion encountered a pack which was measured and found to be of a total thickness of 34 feet, nine feet being above the level of the field, and through which she successfully forced her way, a feat which would have been quite impossible but for the action of the forward propeller. The Ermack has broken composed ice of 8 feet 3 inches in thickness, and she has gone through field ice of about 40 inches, with 6 inches of snow upon it, at a speed of 2½ to 3 knots; moreover, she has been driven at a speed of about 10 knots through clear ice of 24 inches, while ice under 18 inches has little effect upon her. It is found that snow has a wonderful retarding influence upon an ice breaker, much more so than a similar thickness of solid ice.

Her maneuvering powers are remarkable, seeing that with her helm only she can turn in a circle of only twice her own length; and her handiness was specially shown when she entered the frozen-up port of Cronstadt on March 16 last, proceeding without stopping through an entrance only 95 feet wide, and berthing herself, alongside the quay without assistance, whereas under ordinary circumstances of navigation in open water steamers are in the habit of invariably being assisted by tugboats.

Her practical utility was not long in being put to the test. Immediately on her arrival urgent word was received from Revel that a number of steamers were in great jeopardy. She at once proceeded there and was the means of liberating 33 steamers, of an aggregate value of \$7,500,000. She subsequently returned to Cronstadt and St. Petersburg, and was instrumental in relieving and facilitating the entry of some forty more steamers several weeks earlier than if they had waited the ordinary opening of navigation. The above performance is a very conclusive proof of the commercial value of such a vessel.

As a factor in naval operations it is not difficult to estimate the possibilities of a vessel like the Ermack. It looks as if the Russian fleet can no longer be considered as ice bound when wintering in the Baltic ports of Vladivostok—a fact of very considerable importance in the event of Russia finding herself engaged in a naval war. Moreover, the vessel itself would be distinctly formidable as a ship of war. As a ram she would be a deadly weapon of offense, if she once got her blow home, especially on a ship with a low freeboard, for she would bear her down by her overwhelming weight until she filled and sank, while the Ermack herself would be invulnerable as long as her engines and boilers, which are excellently protected, were intact.

It is stated in a recent report (Sept. 23, 1899) that the "Ermack has just finished a two weeks' trip to the north-west of Spitzbergen. She passed through about 200 miles of ice, and its thickness is estimated at about 14 feet. The ship performed the task without injury."

According to latest advices (Oct. 19, 1899) the Ermack is shortly to take up a more important work than ever. This is to keep navigation open during the coming winter, not only between St. Petersburg and Cronstadt, a distance of 20 miles, but also as far as Revel and Libau on the Baltic. If the Ermack succeeds in keeping the Gulf of Finland and the Baltic open to navigation the shipping trade of St. Petersburg will be greatly affected thereby. Hitherto the shipping trade of the capital and Cronstadt has been impossible for about six months every year. During the winter a certain amount of trade is carried on by rail to those Baltic ports which happen to be open to navigation.

### VISIBLE SUPPLY OF GRAIN.

As compiled for THE MARINE RECORD, by George F. Stone, Secretary Chicago Board of Trade.

| CITIES WHERE STORED.          | WHEAT. Bushels. | CORN. Bushels. | OATS. Bushels. | RYE Bushels. | BARLEY Bushels. |
|-------------------------------|-----------------|----------------|----------------|--------------|-----------------|
| Buffalo.....                  | 1,159,000       | 10,000         | 132,000        | 67,000       | 652,000         |
| " afloat.....                 | 283,000         | 205,000        |                |              |                 |
| Chicago.....                  | 14,725,000      | 4,594,000      | 1,585,000      | 231,000      | 21,000          |
| " afloat.....                 | 85,000          | 3,384,000      | 431,000        |              |                 |
| Detroit.....                  | 471,000         | 320,000        | 49,000         | 6,000        | 20,000          |
| Duluth.....                   | 11,185,000      | 812,000        | 158,000        | 399,000      | 172,000         |
| " afloat.....                 | 248,000         |                |                |              |                 |
| Fort William, Ont.            | 3,138,000       |                |                | 10,000       | 19,000          |
| Milwaukee.....                | 256,000         |                |                |              |                 |
| " afloat.....                 |                 | 100,000        | 624,000        |              |                 |
| Montreal.....                 | 55,000          | 17,000         | 391,000        | 6,000        | 36,000          |
| Port Arthur, Ont.             | 208,000         |                |                |              |                 |
| Toledo.....                   | 912,000         | 1,774,000      | 153,000        | 6,000        |                 |
| Toronto.....                  | 64,000          |                | 4,000          |              | 48,000          |
| Grand Total.....              | 54,084,000      | 19,666,000     | 6,058,000      | 1,176,000    | 1,250,000       |
| Corresponding Date, 1899..... | 29,477,000      | 33,334,000     | 10,023,000     | 1,542,000    | 2,563,000       |
| Increase.....                 | 639,000         | 3,333,000      | 393,000        | 24,000       |                 |
| Decrease.....                 |                 |                |                |              | 91,000          |

While the stock of grain at lake ports only is here given, the total shows the figures for the entire country except the Pacific Slope.

### STEAMBOAT OFFICERS APPOINTED FOR THE SEASON OF 1900.

List furnished the RECORD by owners and managers.

WHITE STAR LINE, Detroit, Mich.—Str. Greyhound, Capt. A. Fitts; Eng. Tashmoo, Capt. B. S. Baker; Eng. Winfred Dubois. City of Toledo, Capt. John J. Stover; Eng. John Westwick.

WILLIAM WARREN, Buffalo.—Str. P. H. Birkhead, Capt. W. J. Hayes; Eng. Edward Knibbs. Bge. C. B. Jones, Capt. John Nelson. C. H. Burton, Capt. Thomas McDermott. Commodore, Capt. Charles Pederson.

RUNNELS & SINCLAIR, Port Huron—Str. Maggie Duncan, Capt. D. M. Sinclair; Eng. Irving Buzard. O. O. Carpenter, Capt. J. E. Rathbun; Eng. J. C. Watson. Schr. Favorite, Capt. L. Sinclair. Constitution, Capt. E. R. Tousley. E. E. Tyson, Capt. C. W. Annis.

THE HAWGOOD & AVERY TRANSIT CO., H. A. Hawgood, Manager, Cleveland, O.—Str. S. S. Curry, Capt. George Robarge; Eng. Geo. Wilson. Geo. F. Williams, Capt. T. C. Ellis; Eng. Robert Buchanan. THE HAWGOOD TRANSIT CO., Arthur H. Hawgood, Manager.—Str. Tampico, Capt. K. A. Jensen; Eng. Wm. H. Stowe.

LAKE ERIE TRANSPORTATION CO., A. W. Colton, Pres. and Gen'l. Mgr., Toledo, O.—Str. George J. Gould, Capt. Walter M. Cottrell; Eng. Geo. A. Butler. S. C. Reynolds, Capt. T. C. Herrick; Eng. James H. Miller. Russell Sage,

Capt. Geo. H. Burnham; Eng. Joseph Kohlbrenner. John C. Gault, Capt. Chas. H. Lewis; Eng. John C. Bustead.

MINNEAPOLIS, ST. PAUL & BUFFALO STEAMSHIP CO., J. C. Mackay, Gen'l. Agt., Buffalo, N. Y.—Str. Minneapolis, Capt. William Jamieson; Eng. Bion St. Bernard. St. Paul, Capt. Peter Thompson; Eng. John Davidson. Hennepin, Capt. A. E. McGregor; Eng. William Bridges. Nebraska, Capt. Neil Anderson; Eng. Joseph Taylor. John Pridgeon, Jr., Capt. D. N. Sherwood; Eng. John Mogan.

A. A. PARKER, Manager, Detroit, Mich.—Str. A. A. Parker, Capt. J. T. Hutton; Eng. M. J. Gilligan. John Oades, Capt. Timese Lemay; Eng. Harry Merrill. John Pridgeon, Jr., Capt. D. N. Sherwood; Eng. John Mogan. B. W. Blanchard, Capt. Thos. Meikleham; Eng. John Bloome. Wrecker Favorite, Capt. Martin Swain; Eng. Geo. L. Simmons. Saginaw, Capt. Isaac Watt; Eng. L. B. Cronk. Schr. B. W. Parker, Capt. Edw. Lohr. Saveland, Capt. Henry Morey.

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### NOTICE TO MARINERS.

ISLE AUX PÊCHES RANGE REAR LIGHT.—On January 10 the structure from which this double light was shown, in the south-westerly part of Lake St. Clair, was carried away by ice. The structure will be rebuilt and the light re-established at the re-opening of the season of navigation.

LAKE ST. CLAIR TWENTY-FOOT CHANNEL LIGHTS. The structures from which these lights were shown, along the sides of the Lake St. Clair Twenty-foot Channel, in the south-westerly part of the lake, have been seriously damaged by ice, and it may be necessary to rebuild them, after the re-opening of the season of navigation, before the lights can be re-established.

UNITED STATES OF AMERICA—NORTHERN LAKES AND RIVERS—NEW YORK.

TREASURY DEPARTMENT,  
OFFICE OF THE LIGHT-HOUSE BOARD,  
WASHINGTON, D. C., February 26, 1900.  
TIBBETTS POINT LIGHT STATION.

Notice is hereby given that on the opening of navigation, 1900, the characteristic of the fog signal (a 10-inch steam whistle) at this station, on Tibbetts Point, southerly side of the head of the St. Lawrence river, will be changed to sound blasts of 3 seconds' duration separated by alternate silent intervals of 17 and 37 seconds, thus:

| Blast  | Silent interval | Blast  | Silent interval |
|--------|-----------------|--------|-----------------|
| 3 sec. | 17 sec.         | 3 sec. | 37 sec.         |

By order of the Light-House Board.

FRANCIS J. HIGGINSON,  
Rear Admiral, U. S. Navy, Chairman.



# ICE REPORT OF THE LAKES.

## SUMMARY OF ICE CONDITIONS.

On Superior the conditions during the week have changed but little; solid ice appears to extend to the islands; large drifting fields move slowly with the wind over the east end.

The ice in Green Bay remains solid and averages from 20 to 28 inches. The prevailing north to east winds have shifted the ice from the east to west shore of Lake Michigan, blocking the harbors for a short time. The most ice is reported from Chicago, where it is from 10 to 15 feet thick, in the outer harbor. The conditions remain unchanged at the Straits.

More ice is reported on Lake Huron than last week. St. Clair river is solid from a few miles south of Port Huron to the lake and Detroit river is open only from Lake St. Clair to Cass street. On Lake Erie the reports indicate that the ice has increased in thickness and no water is to be seen from any of the reporting stations. On Ontario the harbors are closed, with more ice in the lake than was reported last week.

## LAKE SUPERIOR.

Duluth—Harbor ice gains slowly; outside ice still extends out of sight and averages 14 inches near Duluth.

Two Harbors—No open water in sight; outside ice about 6 or 8 inches.

Bayfield—No change since last report; ice 20 inches thick.

Washburn—Conditions unchanged; ice 20 inches.

Ashland—Ice in harbor 28 inches.

Eagle Harbor—Conditions remain unchanged.

Pequaming—Bay still solid as far as can be seen.

Marquette—Drift ice covers the lake in all directions and no open water can be seen.

Grand Marais—Ice in harbor solid; not much in lake.

Whitefish Point—Ice solid in Whitefish Bay; above the point it is moving slowly back and forth.

## LAKE MICHIGAN.

Gladstone—Ice 28 inches thick.

Escanaba—Ice still very solid; 25 inches;

Sturgeon Bay—Ice about 24 inches thick and solid outside the channel cut by car ferry.

Menominee—Ice conditions unchanged; ice still firm.

Green Bay—Ice 11 inches thick.

Keewaunee—Large field of ice in the lake; none in harbor; no obstruction to navigation.

Milwaukee—Bay frozen until the 4th, when ice moved out and three boats which left harbor February 28 were liberated.

Kenosha—Lake full of ice; harbor ice 2 inches.

Racine—Harbor has been blocked with heavy ice for several days but southwest winds have driven it out about 3 miles from shore.

Chicago—Ice in harbor in broken pieces, and driven together, and almost reaching to the bottom. Immediately outside breakwater immense fields of snow-ice extend eastward about 10 miles and as far north as Waukegan; this ice is 14 to 15 feet thick and makes progress from the harbor, through it, practically impossible. The extreme cold early last week, followed by the severe northeast snowstorm, caused an immense accumulation of ice at the end of the lake, interfering much with navigation. The Goodrich and Barry lines did not attempt to send boats out today (4th) as it is considered impossible to pass out of the outer harbor.

St. Joseph—Harbor free from ice with ice-fields off the mouth of harbor.

South Haven—Harbor frozen solid; ice in the lake extends out as far as can be seen.

Holland—No ice in sight in the lake.

Grand Haven—Easterly winds have carried field ice out into the lake and leaves free harbor.

Muskegon—Harbor ice 12 inches thick.

Glen Haven—Drift ice as far as can be seen varying in thickness from 6 inches upward.

Mackinaw City—Steady cold weather keeping ice solid, in same condition as last week; ice 20 inches thick.

## LAKE HURON.

Mackinaw Island—Ice to the eastward of the islands for about 7 miles.

Detour—Ice-field extends to mouth of river; new ice 4 inches, old ice 18 inches thick.

Alpena—Thunder Bay clear near station; drift ice around Middle and Thunder Bay Islands.

East Tawas—Ice in harbor will average 22 inches.

Bay City—Ice 14 inches thick in river.

Harbor Beach—Considerable ice floating in the lake.

Port Huron—During past week, lake has remained frozen as far as can be seen, covered with drift ice about 6 inches thick. St. Clair river open from lake to several miles below here.

DETROIT RIVER.—The river is open from the island to the foot of Cass street and solid from there to Lake Erie; car ferries stalled in the ice Monday.

## LAKE ERIE.

Toledo—Ice 8 inches thick.

Put-in-Bay—Ice about 12 inches thick between Bass Islands; about 8 inches in south passage; ice to north and west as far as can be seen.

Sandusky—Nine inches of ice in harbor.

Huron—Ice and snow piled in the lake from 10 to 15 feet high; no open water can be seen.

Cleveland—Ice five inches thick.

Ashtabula Harbor—Ice as far as can be seen.

Erie—Ice in harbor and lake remained solid during the week; ice in lake extends as far as can be seen.

Buffalo—Harbor ice 12 inches; no water in sight except at mouth of river.

## LAKE ONTARIO.

Charlotte—Ice in harbor increased to 7 inches; some drift ice in the lake but not heavy.

North Fair Haven—Harbor frozen solid, ice 13 inches; small quantities of moving ice in the lake.

Oswego—Harbor full of ice and there is more ice off the mouth of the harbor than there has been for years.

Cape Vincent—No water in sight; ice 15 inches.

NORMAN B. CONGER,

Local Forecast Official, Marine Agent.

Actions—Pleading—Where a libel to recover for salvage services set out a full history of such services, including a contract for compensation made after the services had commenced, and prayed for the sum named in the contract, to which libel no exceptions were filed, but the answer expressly put in issue the validity of the contract, under the liberal rules of pleading in admiralty, it is competent for the court, on finding the contract to be valid, to treat the suit as one based thereon, and to decree compensation to the libelants in accordance with its terms. The Thornley, 98 Fed. Rep. (U. S.) 735.

Salvage—Amount of Recovery—Nature of Service.—Where a vessel grounded on a dangerous reef, where she suffered injury from pounding, even during calm weather, was released, entirely through the efforts of her salvors, only in time to escape a gale, in which she would certainly have been destroyed, and she had in her cargo a large quantity of dynamite, on account of which the services rendered were believed at least to be attended with considerable risk, they cannot be considered as of a low order of salvage services, to be sufficiently compensated by payment for the actual labor expended. The Thornley, 98 Fed. Rep. (U. S.) 734.

# WRECK OF THE JULIE PLANTE.

(A LEGENT OF LAC ST. PIERRE.)

On wan dark night on Lac St. Pierre  
De win' she blow, blow, blow,  
An' de crew of de wood scow Julie Plante  
Got scare and run below—  
For de win' she blow lak' hurricane  
Bimeby she blow some more.  
An' de scow bus' up on Lac St. Pierre  
Wan arpent from the shore.

De Captinne walk on de front deck,  
An' walk de hin' deck too—  
He call de crew from up de hole  
He call de cook also.  
De cook she's name was Rosie,  
She come from Montreal,  
Was chambremaid on lumber barge  
On de Grande Lachine Canal.

De win' she blow from nor' eas' wes'  
De sout' win' she blow, too,  
W'en Rosie cry, "Mon Cher Captinne,  
Mon Cher, w'at I shall do?"  
Den de Captinne t'row de big ankeere,  
But still de scow she dreef,  
De crew he can't pass on de shore  
Becos' he los' hees skeef.

De night was black lak' wan black cat,  
De wave run high an' fas',  
W'en de Captinne tak' de Rosie girl  
An' tie her to de mas',  
Den he also tak' de life preserve  
An' jump off on de lak',  
And say "Goody, ma Rosie dear,  
I go drown for your sak'!"

Nex' morning very early  
'Bout ha'f-pas' two-t'ree-four—  
De Captinne-oscow- an de po- r Rosie  
Was corpses on de shore,  
For de win' she blew lak' hurricane  
Bimeby she blew some more,  
An' de scow bus' up on Lac St. Pierre  
Wan arpent from de shore.

## MORAL.

Now all good wood scow sailor man  
Tak' warning by dat storm  
An' go an' marry some nice French girl  
An' leev on wan beeg farm.  
De win' can blow lak' hurricane,  
An' s'pose she blow some more  
You can't get drown on Lac St. Pierre  
So long as you stay on shore.

W. H. Drummond's own version in "The Habitant and other French-Canadian Poems."

DAVID KAHNWEILER'S SONS, 437 Pearl street, New York City, have purchased, through the courtesy of the U. S. Navy, at the Brooklyn yard, all of the boats belonging to the steam yacht Mayflower (late Ogden Goelet, owner) before it was purchased by the U. S. Navy. These boats, practically new and in perfect condition, ready for service and for sale, are as follows: 1 steam cutter, 32 feet long with engine, boiler and outfit; 1 cutter, 30 feet long with outfit; 1 cutter, 27 feet long with outfit; 1 cutter, 19 feet long with outfit; 1 sail boat, 23 feet long with outfit. They also have a large number of second-hand and new metallic and wooden life boats, whale boats and yawls. For further information apply to above address.

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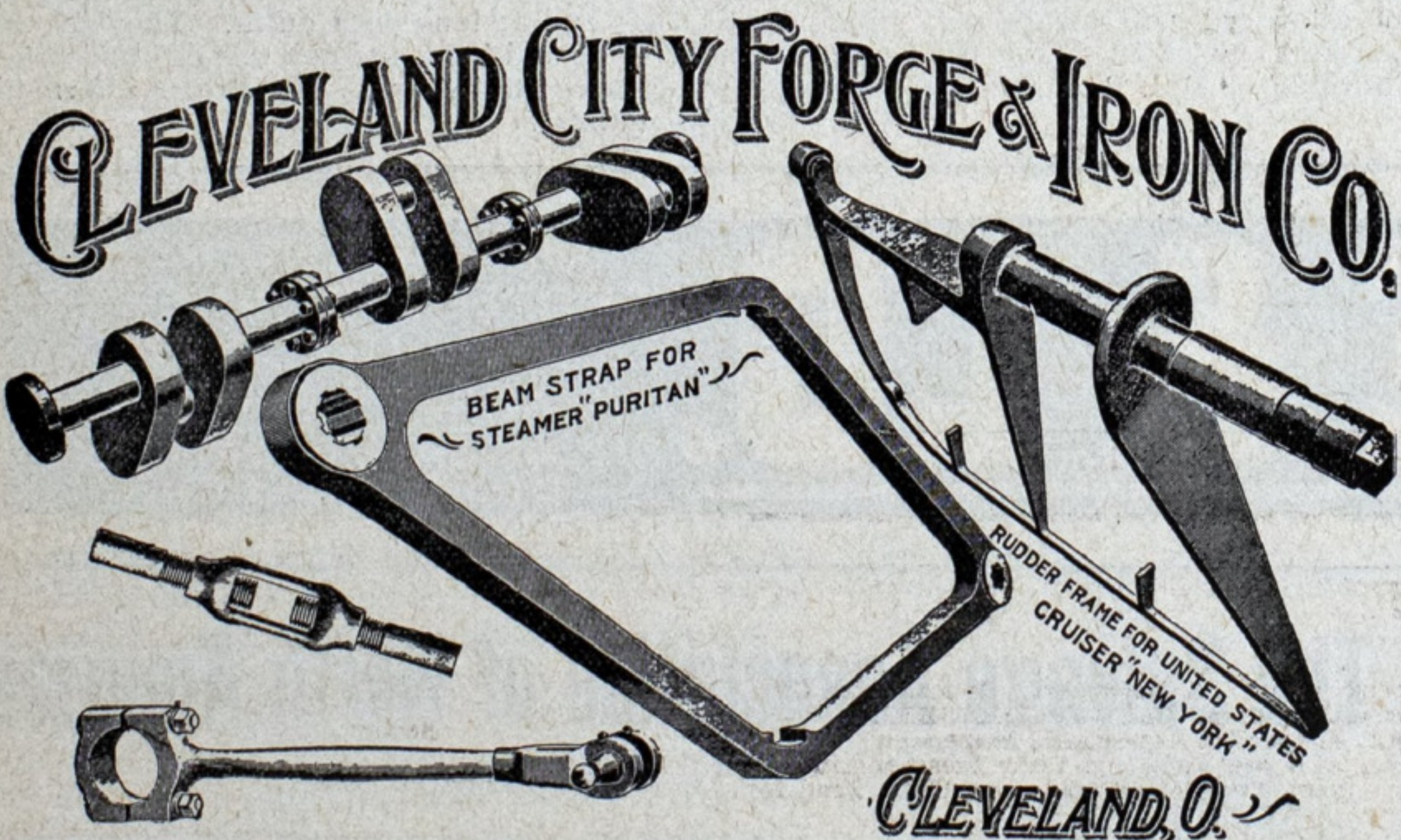
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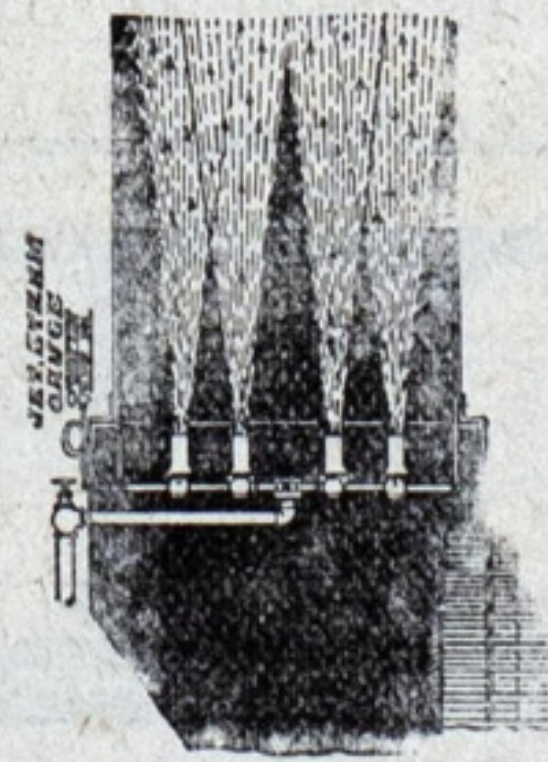
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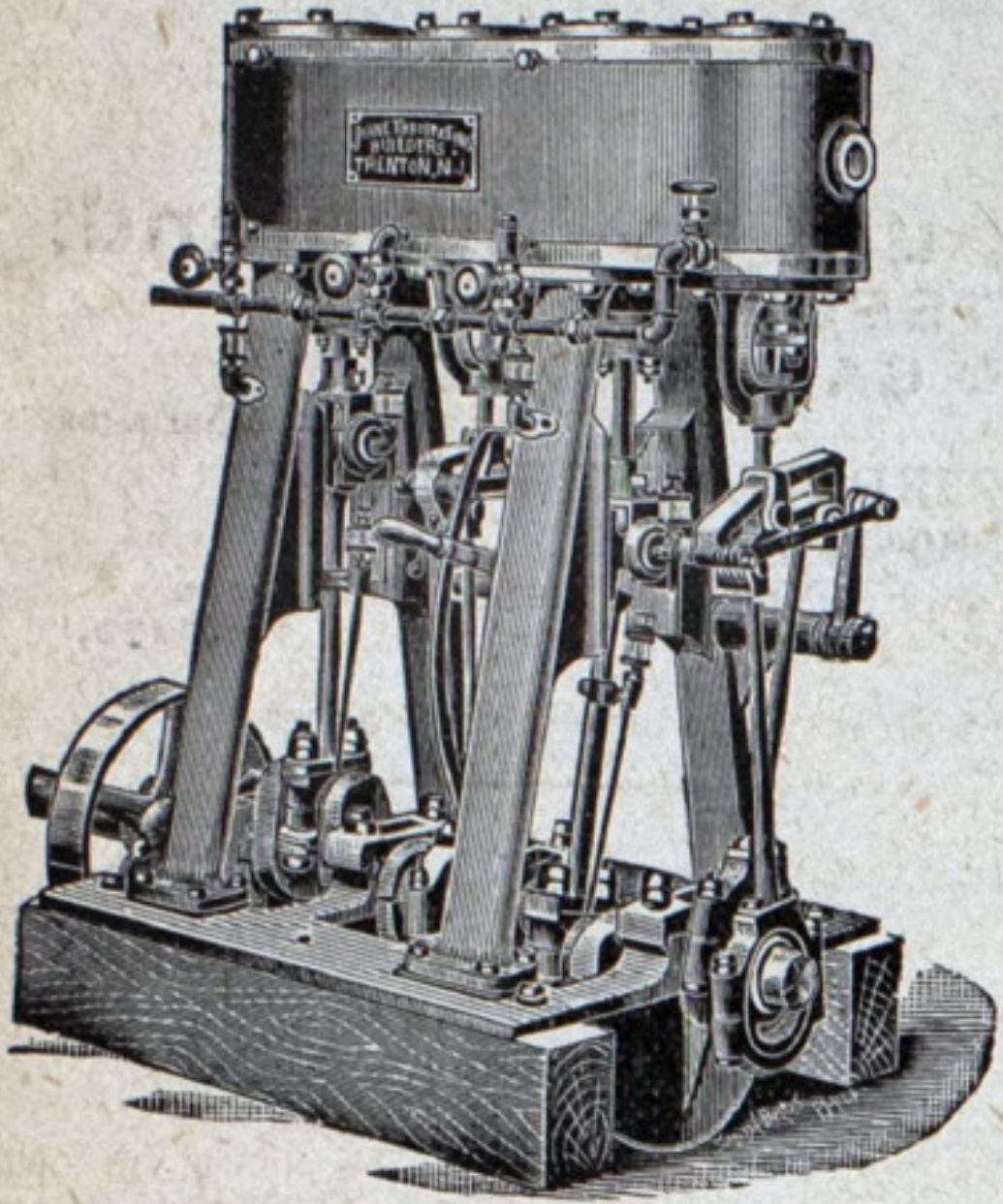
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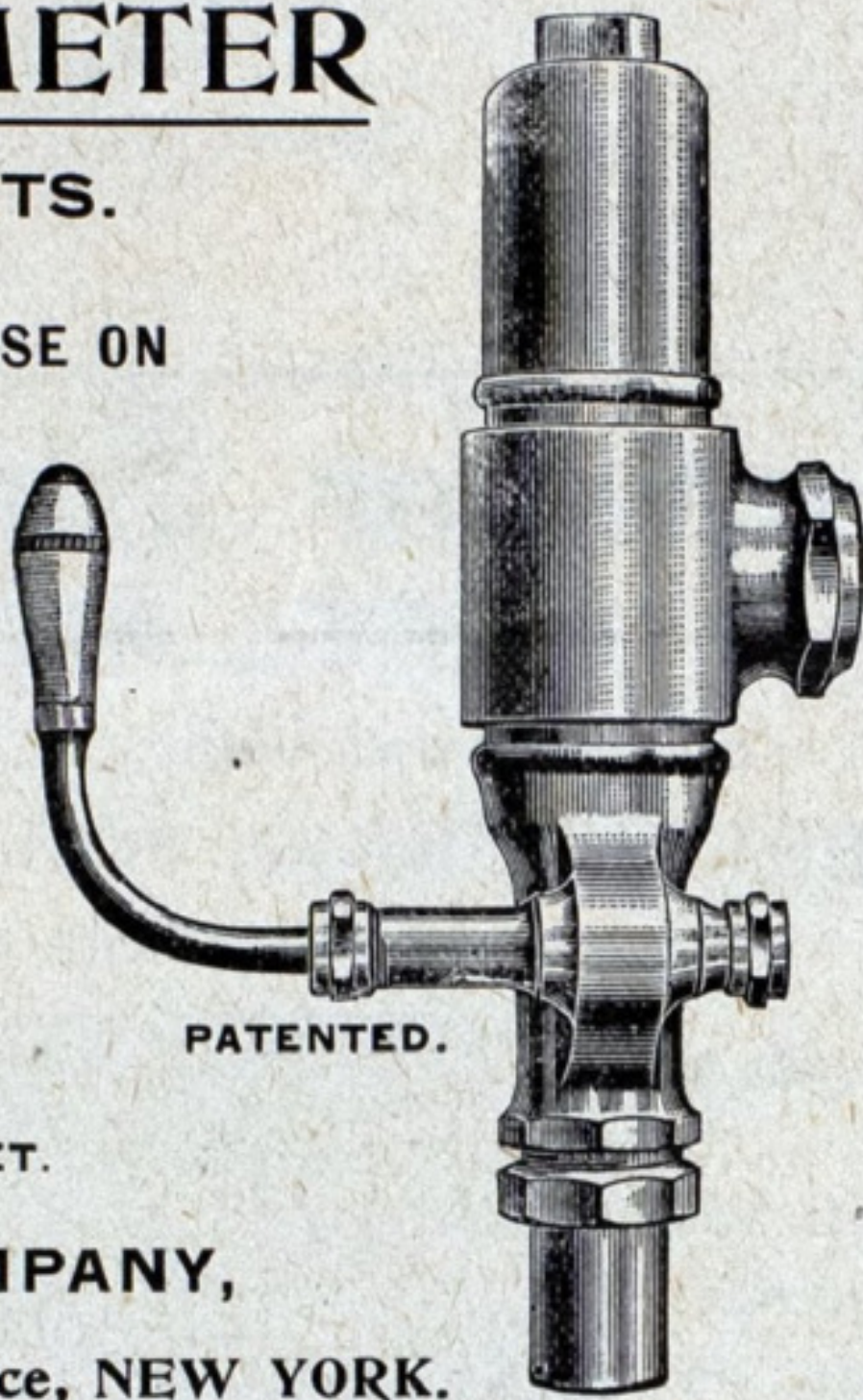
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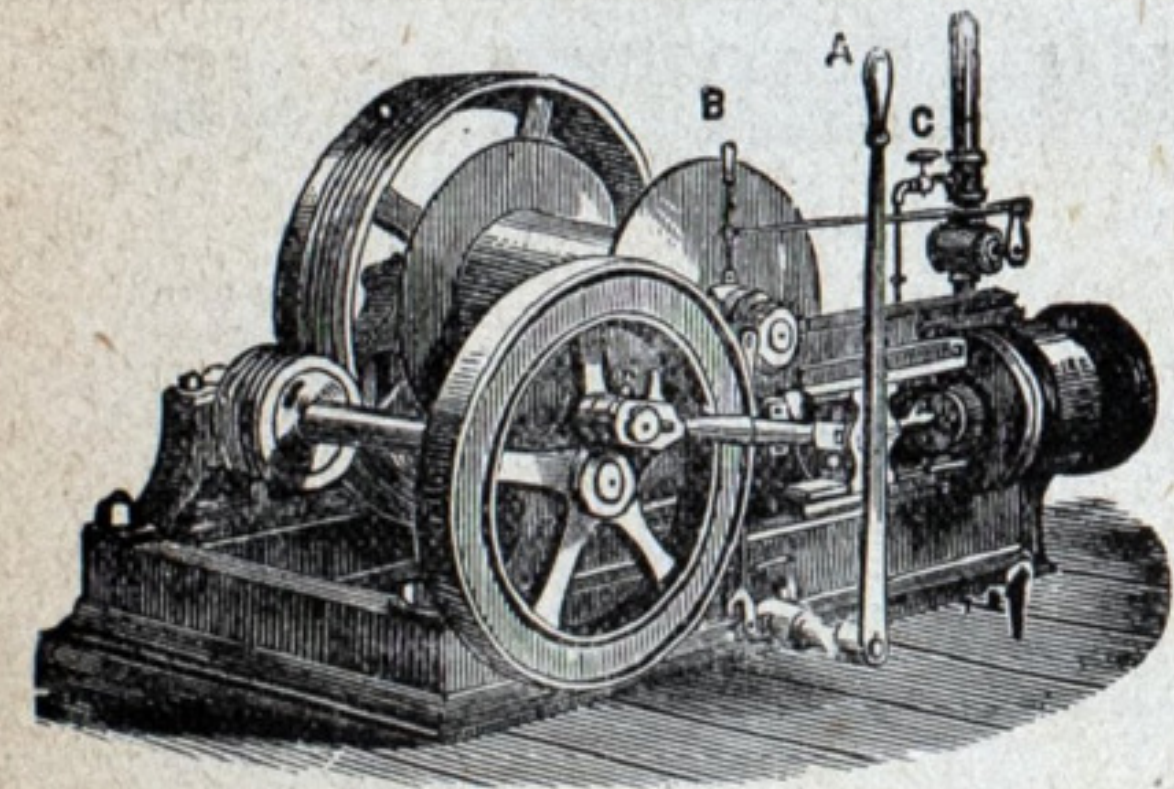
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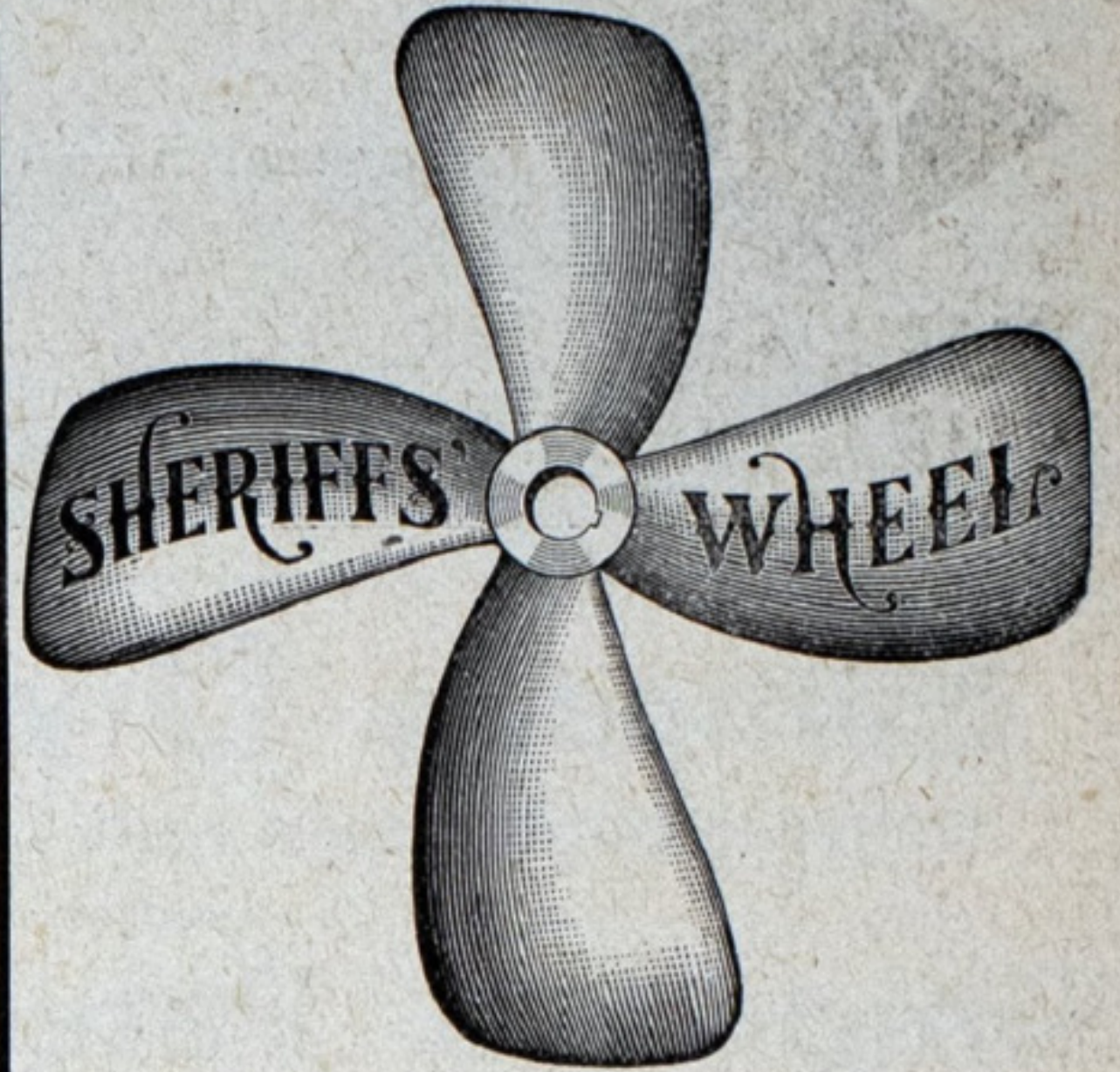
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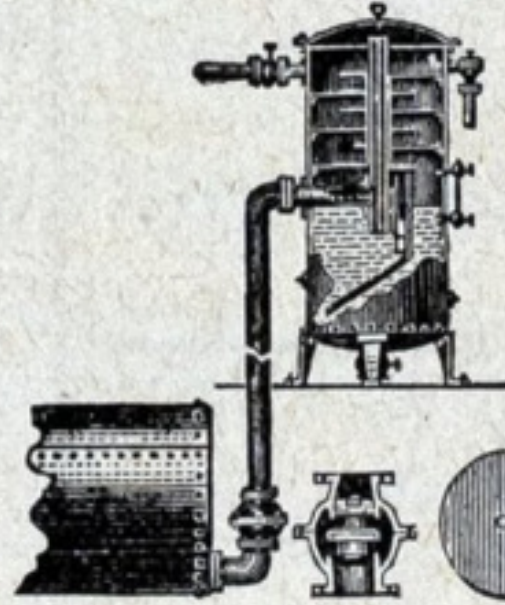
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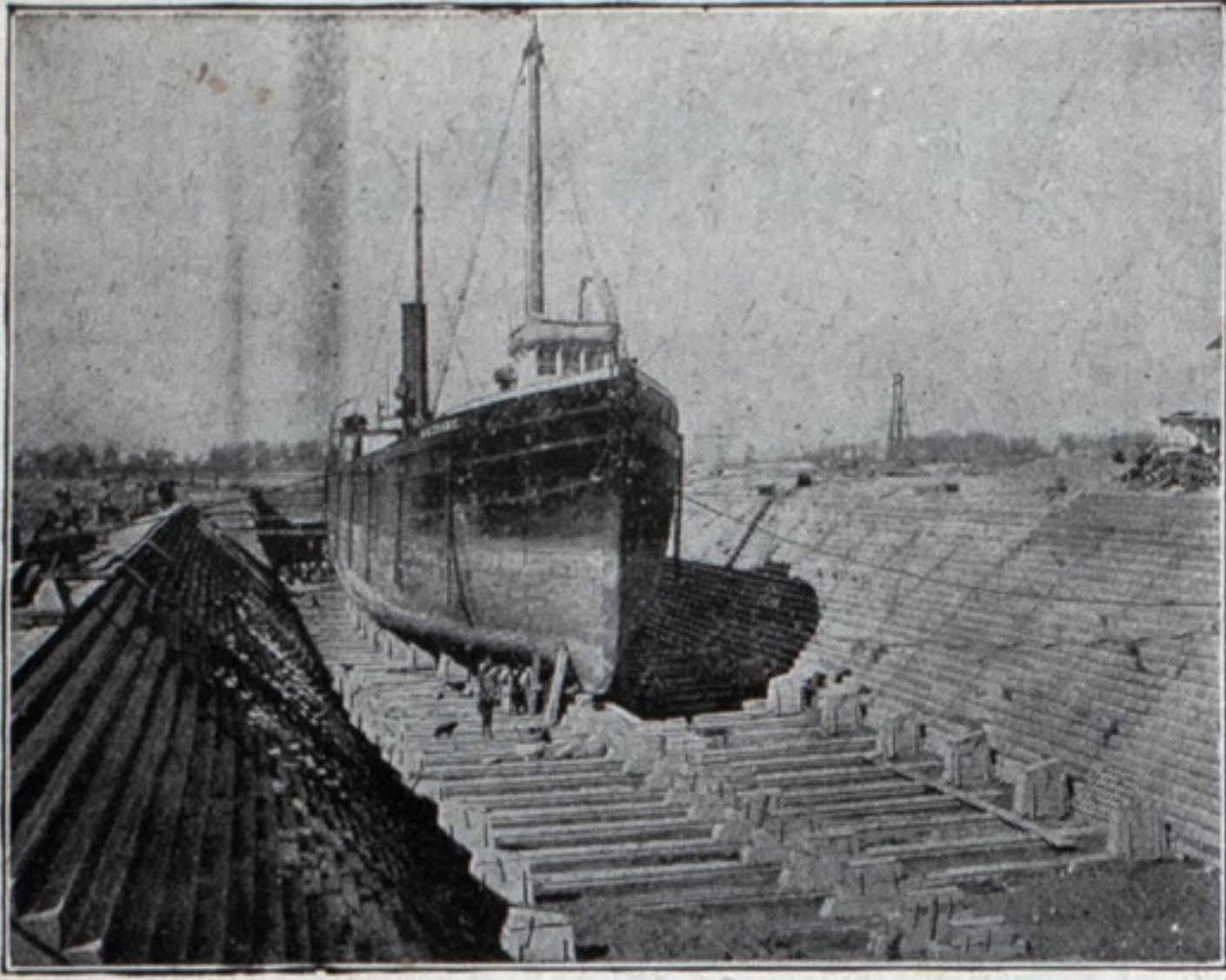
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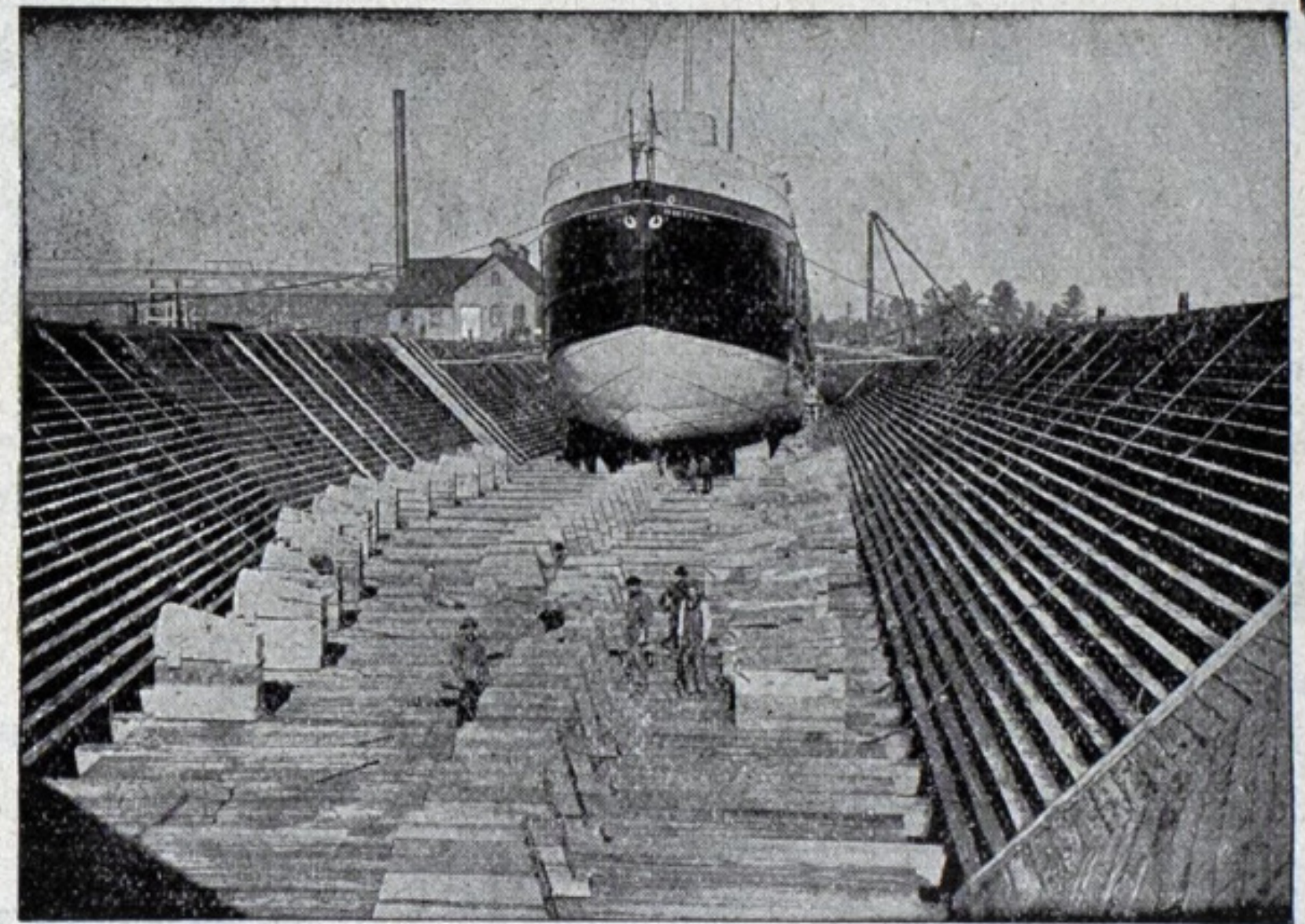
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| Length, Extreme..... | 587 feet.  | Entrance, Top.....    | 55 feet 9 in. |
| Breadth, Top.....    | 90 " 4 in. | Entrance, Bottom..... | 50 "          |
| Breadth, Bottom..... | 52 "       | Depth over Sills..... | 18 "          |

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